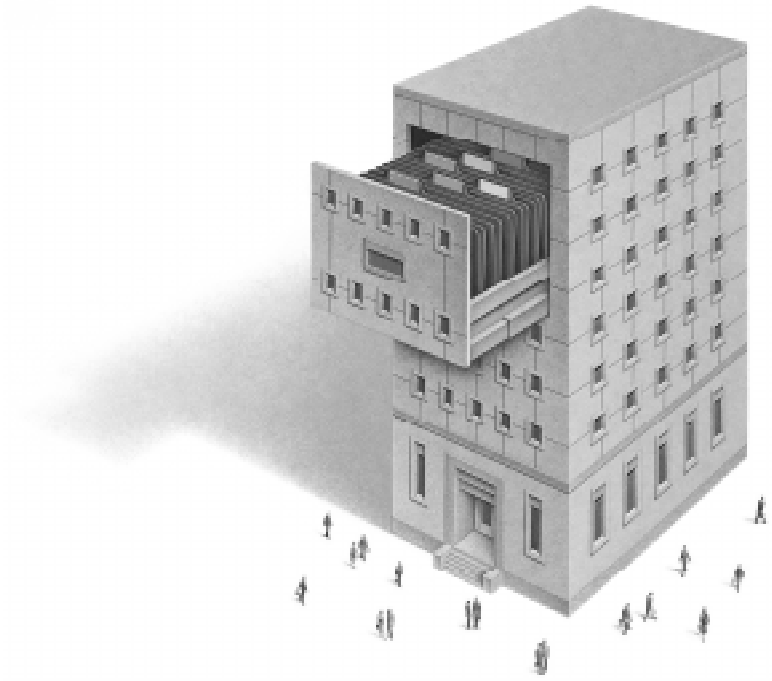
FOR MAC OS



FileMaker PRO

User's Guide

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Preface: Getting help

Welcome to the FileMaker Pro application from Claris Corporation. FileMaker Pro is designed to help you manage information easily and effectively.

If you're new to the Mac OS you need to learn about using the mouse, working with disks, and other Mac OS conventions. See the documentation that came with your computer.

Important This documentation is written for users of Mac OS 7.5 or greater. If you are using Mac OS 8, what you see on your screen might not match the documentation.

Customer support and registration

Please take the time to complete and mail the product registration card that is included in this package. Refer to our Web site at http://www.claris.com for information about customer support.

U.S. and Canadian customers can also refer to the Claris Service Directory included with the software. For customers outside of the U.S. or Canada, refer to the Technical Support brochure included with the software.

Using Help and the user's guide together

Throughout this guide you see Help icons in the margin, along with instructions, that tell you what *keywords* to use to find a related Help topic. A keyword is like a term in an index. In some cases, Help gives you additional information about a subject. For more information about using Help keywords, see "To return to any topic you viewed during a help session, choose Display History Window from the Options menu, and then double-click the topic title." on page XVII.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- Help, using

Use the *FileMaker Pro Quick Reference* on the back cover of this user's guide to get at-a-glance information about using the FileMaker Pro tools and status area controls.

Glossary terms are available in the Help Reference section, as well as underlined with a dotted line in Help topics.

Note The examples in this documentation show dates and numbers in U.S. formats such as November 30, 1998 and $1,234.50.

Using FileMaker Pro Help

FileMaker Pro Help is available whenever FileMaker Pro is running. It contains some information not in the printed documentation, like troubleshooting tips. As you get comfortable with FileMaker Pro, you'll be able to find all the information you need in FileMaker Pro Help.

Opening FileMaker Pro Help

To open Help when FileMaker Pro is running, choose a command from the or Help menu:

Choose	To see
About Balloon Help	Directions for using Apple Balloon Help
Show Balloons	Brief descriptions of FileMaker Pro tools, icons, and menus. (To turn off Balloon Help, choose Hide Balloons.)
FileMaker Help	A context-sensitive Help topic
FileMaker Help Topics	Topic titles in a table of contents
FileMaker Help Index	An alphabetical list of index entries (key words)

Whenever you open FileMaker Pro Help, you start the QuickHelp 4.0 application, which runs independently of FileMaker Pro.

Managing FileMaker Pro Help

Here are some ways to manage FileMaker Pro Help and the windows on your screen:

To	Do this
Work in FileMaker Pro while FileMaker Pro Help is running	Start FileMaker Pro, click a FileMaker Pro window, or choose FileMaker Pro from the application menu (at the right of the menu bar).
Move a window	Drag the window's title bar.
Arrange windows for easy access	On a small screen, move the FileMaker Pro document window and the Help window so the corners overlap. Then you can click a corner to bring a window into view. On a larger screen, arrange the windows side by side.
Switch between the Help window and a FileMaker Pro file window	Click the window you want to work with.
Close FileMaker Pro Help and leave it running	Click the close box in the upper-left corner of the window. Claris Help Viewer continues to run in the background. To show Help again, click a FileMaker Pro window, and then press ⌘-?.
Hide FileMaker Pro Help and leave it running	Click a Help window, and then choose Hide QuickHelp 4.0 from the application menu (at the right of the menu bar). To show Help again, choose Show All from the application menu.
Quit FileMaker Pro Help and the QuickHelp 4.0 application	Click the Help window to make it active, and then choose Quit from the File menu.

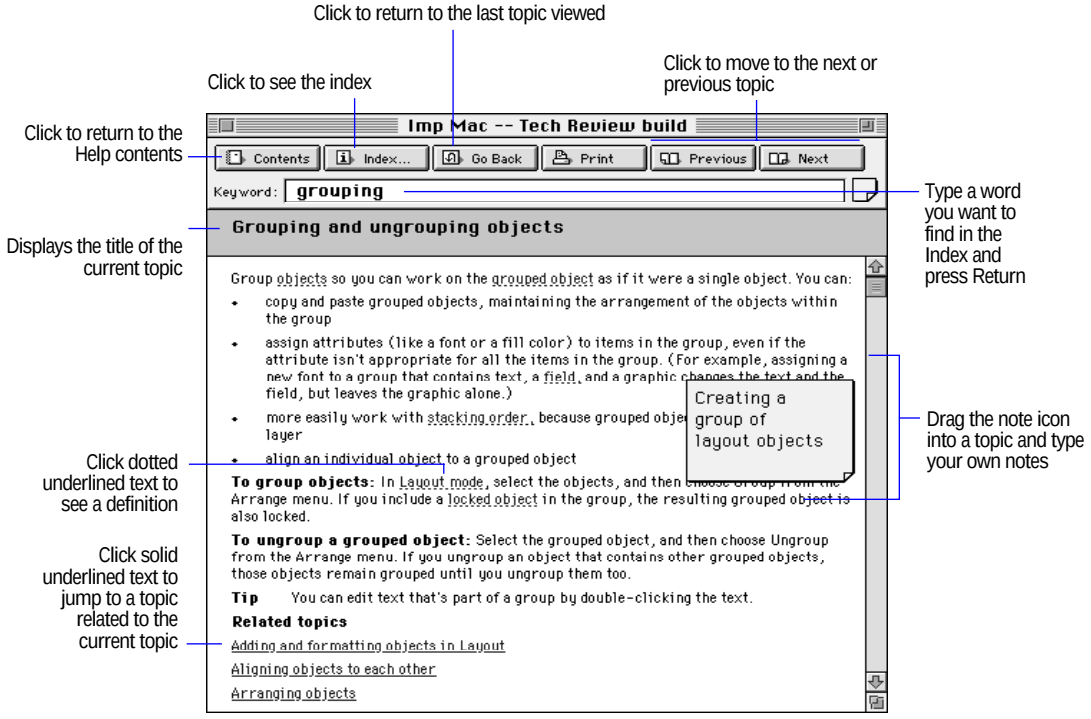
Using the Help contents

When you open FileMaker Pro Help, you see a list of Help topics, like the table of contents in a book. You can click topic titles to see any subtopics, and then click a topic to move to the information you need.

Using the Help window

To navigate in the Help system, you click buttons and underlined text in the Help window.

Click solid underlined text to jump to a topic related to the current topic.


Click to return to the last topic viewed
Click to see the index
Click to move to the next or previous topic
Click to return to the Help contents
Imp Mac -- Tech Review build
Contents
Index...
Go Back
Print
Previous
Next
Keyword: grouping
Type a word you want to find in the Index and press Return
Displays the title of the current topic
Grouping and ungrouping objects
Group objects so you can work on the grouped object as if it were a single object. You can:
copy and paste grouped objects, maintaining the arrangement of the objects within the group
assign attributes (like a font or a fill color) to items in the group, even if the attribute isn't appropriate for all the items in the group. (For example, assigning a new font to a group that contains text, a field, and a graphic changes the text and the field, but leaves the graphic alone.)
more easily work with stacking order, because grouped objects
layer
align an individual object to a grouped object
Creating a group of layout objects
Drag the note icon into a topic and type your own notes
Click dotted underlined text to see a definition
To group objects: In Layout mode, select the objects, and then choose Group from the Arrange menu. If you include a locked object in the group, the resulting grouped object is also locked.
To ungroup a grouped object: Select the grouped object, and then choose Ungroup from the Arrange menu. If you ungroup an object that contains other grouped objects, those objects remain grouped until you ungroup them too.
Tip You can edit text that's part of a group by double-clicking the text.
Related topics
Click solid underlined text to jump to a topic related to the current topic
Adding and formatting objects in Layout
Aligning objects to each other
Arranging objects

To return to any topic you viewed during a help session, choose History Window from the Options menu, and then double-click the topic title.

To return to any topic you viewed during a help session, choose Display History Window from the Options menu, and then double-click the topic title.

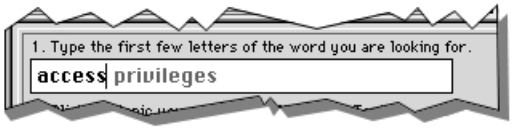
Using the Help index

FileMaker Pro Help comes with a list of index entries, which are significant words and phrases (called *keywords*), to help you find the topics containing the information you want. Each index entry is associated with one or more topics.

This user's guide gives you keywords throughout the documentation to help you find related topics by their index entries in Help.

To use the Help index:

1. If you aren't in Help, choose FileMaker Index from the ? or Help menu.
2. In the Index window, type all or part of the keyword to find.



You see the topics associated with the keyword in the list.

3. Double-click the topic you want.

To browse the index, scroll through the alphabetical list or type the first few letters of the entry you're looking for

Getting additional help

To get context-sensitive help for dialog boxes and menu items, press the Help key (on an extended keyboard) or press ⌘-?.

Use Help to get information on these additional tasks:

For information on	Choose FileMaker Help Index from the ? or Help menu, and then type
Printing a Help topic	Help, printing
Adding your own notes or instructions to a topic (*annotations*)	Help, customizing
Creating bookmarks to quickly access topics you use often	Help, customizing
Copying all or part of a topic to an application that supports text, to compile help information you use often	Help, using
Setting Help preferences to customize the way you use Help	Help, customizing

Using the FileMaker Pro documentation

This guide and the other documentation in the set give you all the information you need to know about installing and using FileMaker Pro.

Start by reading chapter 1, “FileMaker Pro basics,” for an overview of FileMaker Pro, and for information about managing files and performing common tasks. Then read chapter 2, “Creating a database file,” for information about designing FileMaker Pro database files. You can then move to the chapters you need for doing your work, such as using layouts, or entering, finding, and sorting information.

Use the following additional tools to help you with FileMaker Pro.

Use	To
FileMaker Pro Installation and New Features Guide	Install FileMaker Pro on your hard disk. If you’ve used previous versions of FileMaker Pro, you can read about features new to this version.
FileMaker Pro Tutorial (an onscreen tutorial)	To get an overview of how to use and design a FileMaker Pro database. You can complete the tutorial in one session, or one segment at a time. To use the tutorial, double-click the Tutorial file in the Tutorial folder.

Use	To
FileMaker Pro template files	See and work with database files created with FileMaker Pro. You can use the templates for your business or personal work—as they are, or change them to suit your needs. (See "Creating and opening files" on page 1-9.)
FileMaker Pro Help	Get complete, onscreen, step-by-step instructions and reference information for using FileMaker Pro as you work. (See "Using FileMaker Pro Help" on page XIV.)
Balloon Help	See brief descriptions of FileMaker Pro tools, icons, and menus. (Choose Show Balloons from the ? or Help menu. To turn off Balloon Help, choose Hide Balloons.) Choose About Balloon Help from the ? or Help menu to see directions for using Apple Balloon Help.
CDML Developer's Guide	Get information on publishing custom Web database solutions. Open the CDML Reference file in the Web Tools folder, in the FileMaker Pro 4.0 folder
Web browser Help	Get help while working with a database in a browser. Available by clicking the ? icon in the Instant Web Publishing interface.
Sample custom HTML pages and databases	Use as models for creating your own custom Web databases. Available in the Web folder, in the FileMaker Pro 4.0 folder.

Chapter 1: FileMaker Pro basics

You're using FileMaker Pro software because you have information to manage, or information you would like to publish on the World Wide Web. This information could be just about anything: accounts, inventories, suppliers, sales contacts, employees, or products. The power, flexibility, and ease of use of FileMaker Pro help you manage that information, so you can:

- find information quickly
- update and maintain information
- print documents like invoices, form letters, and mailing labels
- analyze information using onscreen and printed reports

Important Before you read this chapter, be sure you know how to use FileMaker Pro Help, as explained in the preface, "Getting help."

Understanding FileMaker Pro

Before you begin to work with FileMaker Pro, you should be familiar with the basics of FileMaker Pro. If you're new to databases, start with the next section, "What's a database?" If you're familiar with databases but new to FileMaker Pro, start with "What's a FileMaker Pro database file?" on page 1-3.

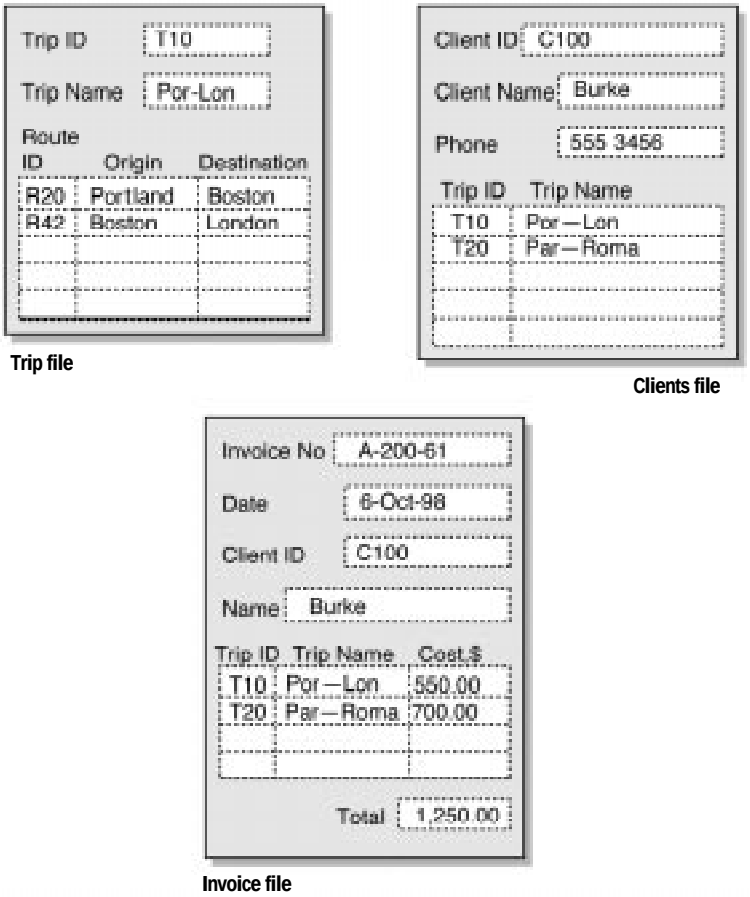
What's a database?

A *database* is a collection of information, or *data*, that you can organize, update, sort, search through, and print as needed. A database doesn't just hold information—you use a database to organize and analyze information so that you understand its significance.

A database can be one *file*, such as Clients, which might hold the names, addresses, and phone and fax numbers of all your clients.

A database can also be many files that, together, contain all the information about a particular topic, or related topics (sometimes called a *database system*). For example, a database for a travel agency can include files that hold information about clients, tours, invoices, and accounting.

Using the relational capabilities of FileMaker Pro, you can join information between files to create a *relational database*. For example, one file can show you which clients went on a particular tour and a *related file* can show how much they paid. (For more information about relational databases, see chapter 10, "Using data from related files.")

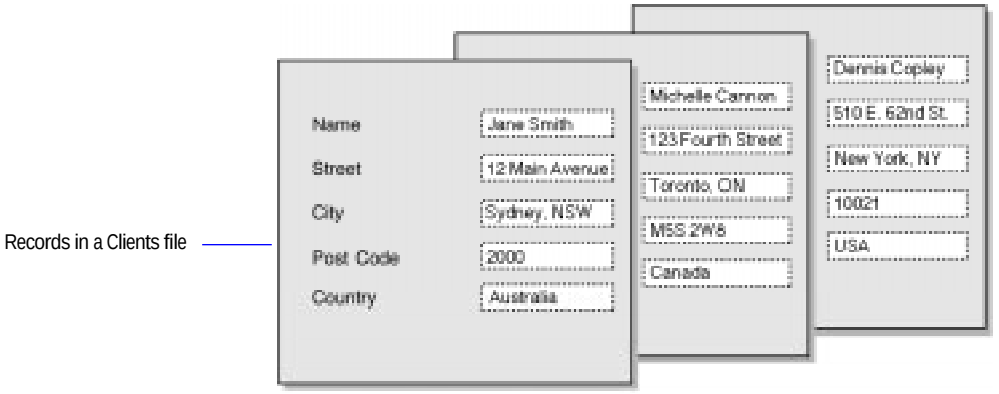


Trip file

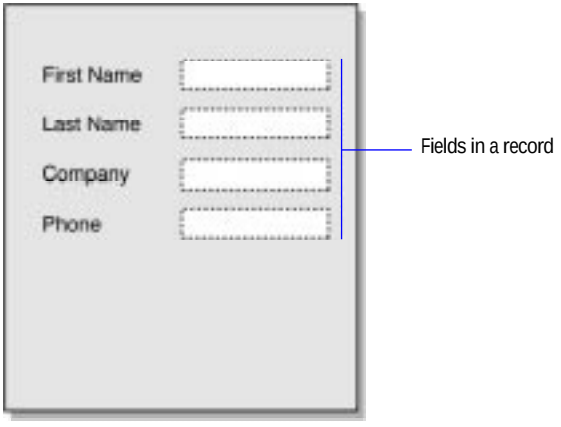
Clients file

Invoice file

A database file contains one or more *records*. Each record holds all the information about one subject (like one person or one identification number). For example, each record in a Clients file would contain the name and address of one client.



Each piece of information in a record—like name, address, and telephone number—is stored in a *field*. You create the fields for each database file.



? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ FileMaker Pro

What's a FileMaker Pro database file?

Each FileMaker Pro database file contains information about the file's structure, like fields and their definitions, access privileges and passwords, calculations, layouts, and scripts. A FileMaker Pro database file also contains the data you enter and work with.

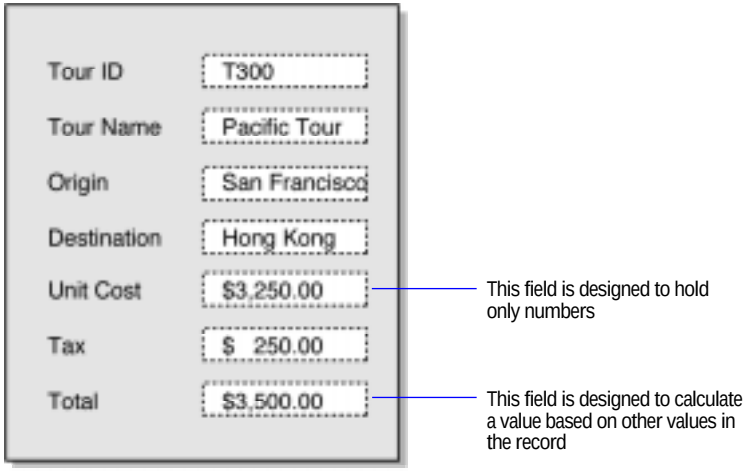
Fields and field definitions

Fields are the basis of a database file. Fields store, calculate, and display the data you have entered or calculated. For example, you might create a field named Tour Name to hold a descriptive name for each tour you add to a Tours database file.

The information you put into a field—by typing, copying, looking up, or importing—is its *value*. Field values in a FileMaker Pro file can be:

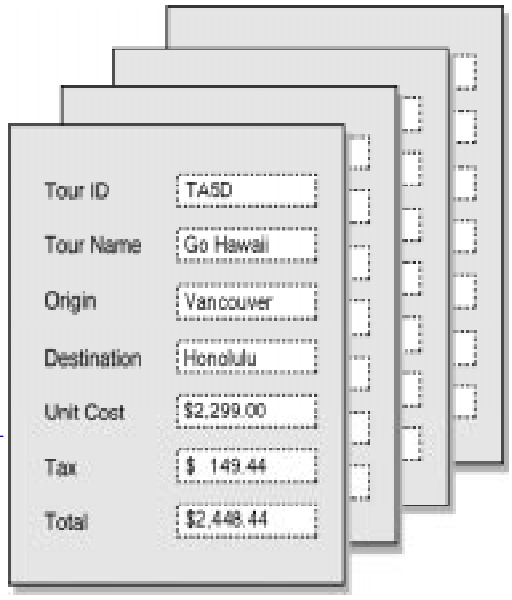
- text
- a number
- a date
- a time
- a graphic, sound, or movie
- the result of a formula that calculates the field's value
- a summary of the values in the field for a group of records

Each field has a set of characteristics that defines how it will store, display, and interpret data, and whether the value is typed or entered into the field or is the result of a calculation. These characteristics are the *field definition*. You create a field in a file and define it to suit your needs. For example, the type of data in the field and whether to calculate the field's value are both part of the field definition.



Records

To enter data in a database file, you create a record and then enter data into the fields. After you have records in a file, you can work with them in various ways, such as sorting them, finding a group of records that contains particular data, or importing and exporting records.



One record contains all the information about a single activity, individual, or subject

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- records, overview

Access privileges and passwords

Access privileges and passwords promote file security by controlling who can use a file and particular fields and layouts, and which tasks they can do. In the FileMaker Pro Web Companion, a password controls who can browse and edit a file on the World Wide Web.

A file doesn't require access privileges and passwords; you can create or change them as needed. For more information see chapter 7, "Networking and access privileges."

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ access privileges

Using relationships in a database

Whether you create a database with one file (sometimes called a *flat-file database*) or many files (a *relational database*), you can use data from other files as if the data were in the current file. A file that contains data used in another file is a related file.

- To copy data from a related file and store it in the current file, define a lookup (see "Looking up and displaying data from other files" on page 10-1).
- To view and work with data from different files in the current file without storing that data in the current file, create a relational database (see "Working with relational databases" on page 10-14).

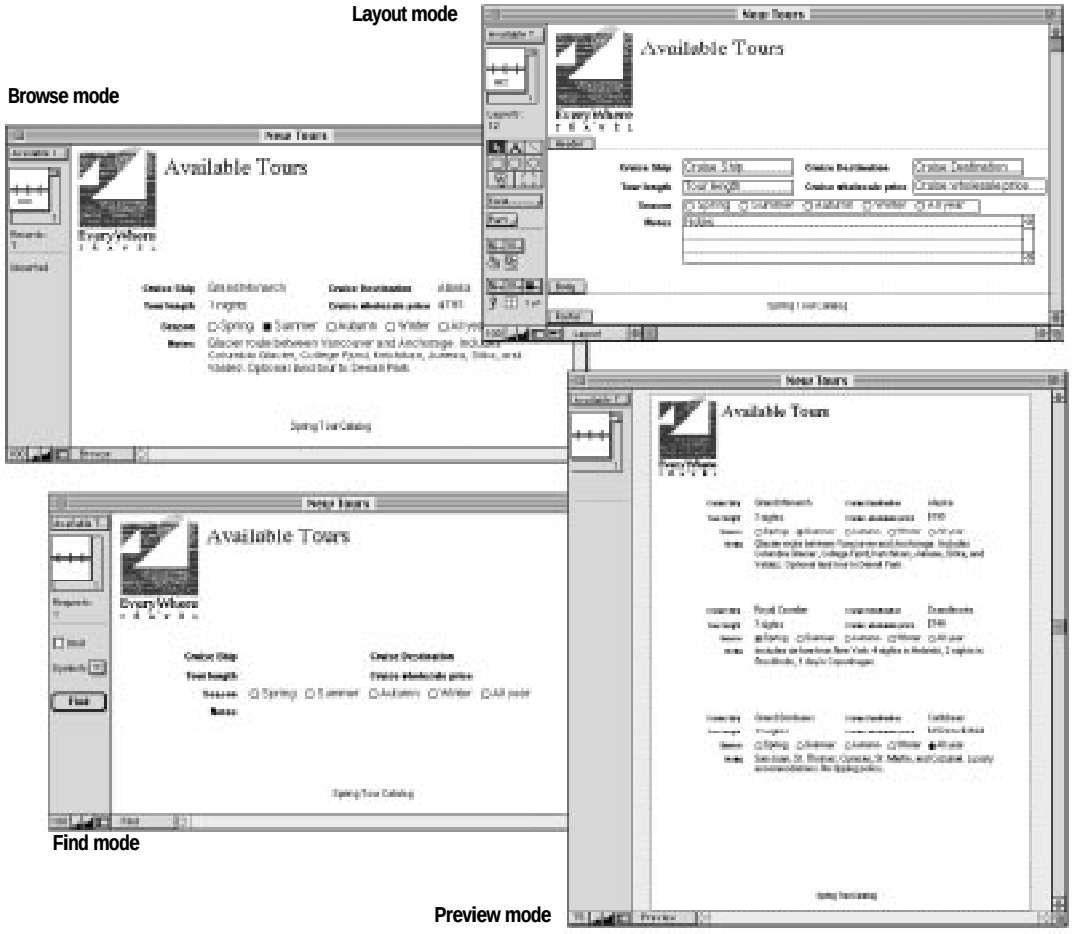
To learn more about these differences, see "Lookups and relational databases: a comparison" on page 10-8.

You can publish both flat-file and relational databases on the World Wide Web using FileMaker Pro Web Companion. For more information, see chapter 11, "Publishing files on the Web."

Working with modes

You work in FileMaker Pro in four modes. You switch between modes by choosing a menu command for the mode you want.

In this mode	You do this
Browse	Work with the data in a file. You can view, add, change, sort, omit, and delete records. Browse mode is where you'll do much of your work. For more information, see chapter 4, "Working with information in records."
Layout	Determine how information is presented on your screen or in printed reports, labels, and forms. You design layouts for specific tasks, like data entry or printing invoices or envelopes. For more information, see chapter 3, "Laying out and arranging information."
Find	Search for particular records that match a set of criteria. You can then work with these records, called the *found set*. After you find a group of records, FileMaker Pro returns to Browse mode so you can begin working with them. For more information, see "Finding information" on page 4-20.
Preview	See on your screen how data in records, forms, or reports will look before you print on paper. For more information, see chapter 6, "Previewing and printing information."



Note Some FileMaker Pro tasks, like defining fields and relationships and using ScriptMaker, can be performed in any mode.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- modes

Managing files

The following sections tell you how to work with FileMaker Pro files.

Creating and opening files

You can create a file when you start FileMaker Pro or after FileMaker Pro is already running.

Create a file from a copy of a *template*—a predefined file that you use as is, or modify to suit your particular needs. Or create a file from scratch, without using a template. (If you didn't install templates and want to use them, see the FileMaker Pro *Installation and New Features Guide*.)

After you name a new file, you see the Define Fields dialog box, where you create the database fields and define their characteristics. (See chapter 2, "Creating a database file.")

The following table describes the ways to create or open a file in FileMaker Pro. If FileMaker Pro isn't already running, start it by double-clicking the application icon. When you start FileMaker Pro, you see the New Database dialog box, and you can skip the first (Choose New...) step in the following directions.

To	Do this
Create a file using a template file	In FileMaker Pro, choose New from the File menu. In the New Database dialog box, select Create a new file using a template, choose a template category from the pop-up menu, and then double-click the name of a template file in the list. In the Create New File dialog box, type a name for the file (choose a different folder, if needed), and then click Save
Create a file without using a template file	In FileMaker Pro, choose New from the File menu. In the New Database dialog box, select Create a new empty file, and then click OK. In the Create New File dialog box, type a name for the file (choose a different folder, if needed), and then click Save

To	Do this
Open an existing file	If FileMaker Pro isn't running, in the folder containing your FileMaker Pro files, double-click the name of the file to open. Or drag the file onto the FileMaker Pro application icon You can also double-click the FileMaker Pro application icon. In the New Database dialog box, select Open an existing file, and then click OK. In the Open dialog box, double-click the name of the file to open. If you're asked for a password, type the password, and then click OK If FileMaker Pro is running, choose Open from the File menu, and then double-click the name of the file to open. If you're asked for a password, type the password, and then click OK If you have opened the file recently, you can also choose the filename from the listing in the File menu if you have selected this option in application preferences. For more information, see chapter 9, "Customizing FileMaker Pro."

Keep these points in mind:

- To keep FileMaker Pro from displaying the New Database dialog box, select No longer show this dialog in the New Database dialog box. You can redisplay the dialog box by setting a preference in the General area of the Application Preferences dialog box. (See "Setting general application preferences" on page 9-2.)

- When you open a file createdwith FileMaker Pro versions 1.0 through 2.1, you see a message telling you the file must be converted to FileMaker Pro 4.0 format. To rename the original file, keep the Rename old file as checkbox selected and type a name (or use the FileMaker Pro default). The new file is converted to the current FileMaker Pro file format. The original file has a new name, but the contents don't change. (For more information about converting files from previous versions of FileMaker Pro, see the FileMaker Pro *Installation and New Features Guide*.)
- When you open a file saved with internal default formats different from the system formats set on your computer, you might see an alert message. For information about this situation, see appendix B, "Working with international files."
- You can open a file created in another application, like Lotus 1-2-3, Microsoft Excel, or ClarisWorks software, in FileMaker Pro and convert it to FileMaker Pro format. See "Importing data into a new file" on page 8-9.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- creating files
- opening files

Closing files

FileMaker Pro saves changes you make to a file as you work and whenever you close a file or leave the application.

To close a file, be sure the file's window is active, and then do one of these:

- Click the close box (in the upper-left corner of the file's window).
- Choose Close from the File menu.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- closing database files

Saving a copy of a file

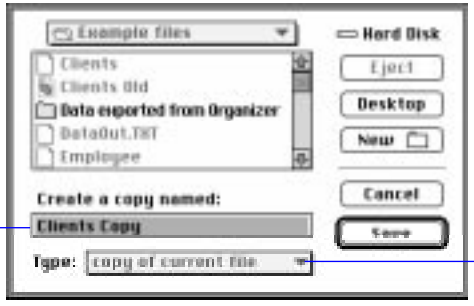
Although FileMaker Pro saves changes to a file as you work, you can save a copy of a file for various purposes.

Important Always save a copy before you make extensive changes. You can't restore data after you delete a field from the Define Fields dialog box or remove records using the Delete Record or Delete All commands.

1. Make the file you want to save the active file, and choose Save a Copy As from the File menu.
2. In the Save a Copy dialog box, for Type, choose an option from the pop-up menu.

Choose	To
Copy of current file	Duplicate the entire file, including the field definitions, layouts, scripts, page setup options, and data. Copying a file is useful before you make extensive changes.
Compressed copy (smaller)	Compress the entire file into less disk space by reclaiming unused space in the file. Compressing a file may take time, so it's a good idea to compress a file only when you're archiving it.
Clone (no records)	Make a copy that contains all the field definitions, layouts, scripts, and page setup options, but no data. Make a clone when you want a template of the file.

3. To rename the file, for Create a copy named, type a name.



4. Click Save.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ saving files

Leaving FileMaker Pro

When you're finished working in FileMaker Pro, choose Quit from the File menu.

Important Always quit FileMaker Pro before you turn off your computer.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- closing database files

Checking your spelling

You can use the installed spelling dictionaries to check the spelling in a file, all at once or as you type. FileMaker Pro compares your text with its *main dictionary* (which contains almost 100,000 words) and a *user dictionary*, in which you can store up to 32,000 unique terms. Each file can have its own user dictionary. This is useful when, for example, you have files that contain unique terms (like medical or legal terms).

You can check the spelling of a selected word or passage, all words in the current record or layout, or all words in the records most recently found (the current *found set*) or browsed in Browse mode.

When FileMaker Pro finds a word it doesn't recognize, you can correct it, skip it, or add it to your user dictionary.

Note Before you begin, be sure the dictionaries currently selected are the ones you want to use. See "Working with spelling dictionaries" on page 1-16.

Checking your spelling in a file

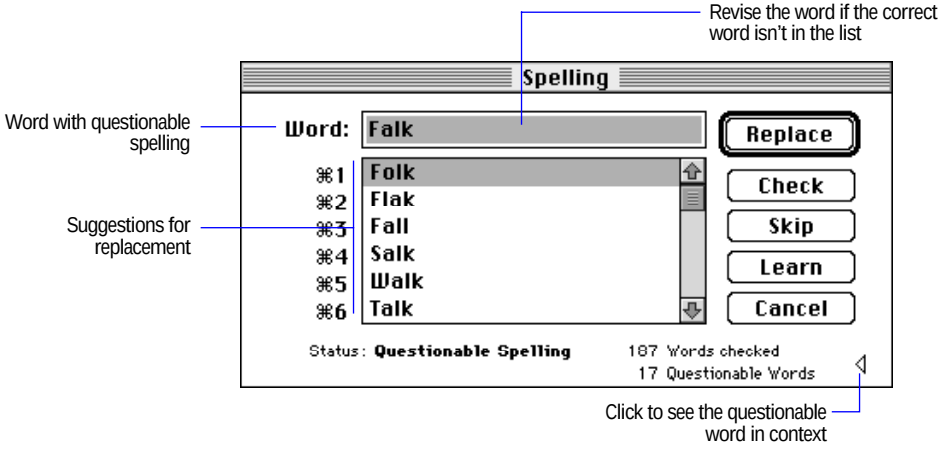
1. Display the layout or record, find the set of records, or select the text to check.

2. Choose Spelling from the Edit menu, and then:

To check the spelling of	Choose
A selected word or passage	Check Selection
Text in the current record	Check Record
Field names and text on the current layout (you must be in Layout mode)	Check Layout
The set of records most recently found or browsed	Check All

3. In the Spelling dialog box, make any changes.

To	Do this when you see a questionable word
Replace a misspelled word with one in the dictionary	Select a word from the list of suggestions, and then click Replace. (You can't change a misspelled word in a restricted or password-protected file or field. In that case, click Next.)
Revise a misspelled word that's not in the dictionaries by typing in your own	For Word, retype the word. (Or use standard text-editing methods to replace only the portion to change.) Then click Check. When the word is spelled as you want, click Replace. (You can't change a misspelled word in a restricted or password-protected file or field. In that case, click Next.)
Skip a word	Click Skip. (FileMaker Pro skips every occurrence of the word.)
Add a word to the user dictionary	Click Learn. (To add, remove, and change words in your user dictionary, see "Editing a spelling dictionary" on page 1-17.)



4. When all questionable words are resolved, click Done.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

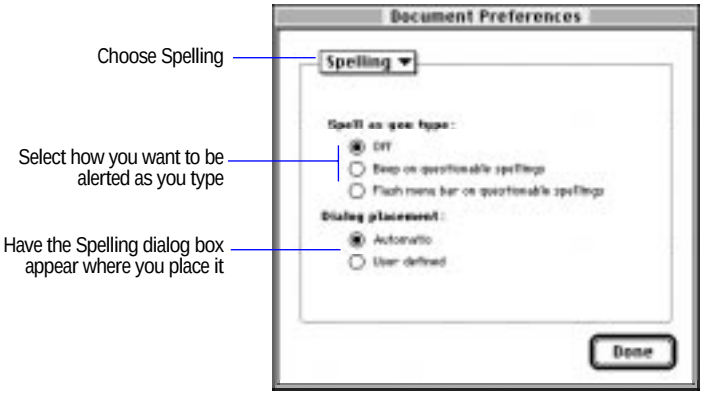
- checking spelling

Checking your spelling as you type

As you type, FileMaker Pro can alert you to errors with either a flash in the menu bar, or a beep.

Checking your spelling as you type is much slower than checking the entire file at one time.

1. Choose Preferences from the Edit menu, and then choose Document.
2. In the Document Preferences dialog box, choose Spelling from the pop-up menu. Select how you want to be alerted and where you want the Spelling dialog box to appear.


Choose Spelling
Select how you want to be alerted as you type
Have the Spelling dialog box appear where you place it
Document Preferences
Spelling
Done

3. Click Done.

When you're alerted to a spelling error, you can do one of these:

- Correct the last word typed.

- Choose Spelling from the Edit menu, and then choose Correct Word, before you press Tab or Enter. Use the Spelling dialog box to correct the word. (See "Important Always quit FileMaker Pro before you turn off your computer." on page 1-13.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ checking spelling

Working with spelling dictionaries

When you check spelling, you can use the main dictionary and the user dictionary installed with FileMaker Pro, or you can use a user dictionary you created.

The main dictionary is associated with all your FileMaker Pro files. User dictionaries work with specific files. After you select a user dictionary for a file, FileMaker Pro uses that dictionary until you select a different one.

Selecting a spelling dictionary

Before you can check spelling, select the spelling dictionaries to use. (If the dictionaries you want to use are already selected, you don't need to reselect them.)

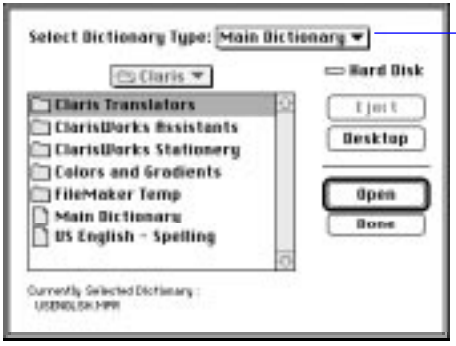
Select dictionaries when:

- your spelling dictionaries are in a place other than the FileMaker Pro folder, the Claris folder, or the System Folder
- you want to make more than one spell-checking pass through a file using different dictionaries (for example, dictionaries of different languages)
- you want to switch to a different dictionary (like one that contains special terms) after checking with the dictionary currently selected

To select, ignore, or create a spelling dictionary:

1. Choose Spelling from the Edit menu, and then choose Select Dictionaries.
2. In the Select Dictionaries dialog box, choose an option.

To	Do this
Select or switch a dictionary	For Select Dictionary Type, choose Main Dictionary or User Dictionary. If needed, locate the correct folder. Then select the dictionary name and click Select.
Ignore your user dictionary	For Select Dictionary Type, choose User Dictionary, and then click None.
Create a user dictionary	For Select Dictionary Type, choose User Dictionary, and then click New. Type a unique, distinguishing name for the new user dictionary, and then click Save.



Making changes to a user dictionary

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ creating files

You can edit, import text to, and export text from a user dictionary.

Editing a spelling dictionary

Before you begin, be sure the dictionary to edit is selected. (See “Selecting a spelling dictionary” on page 1-16.)

1. Choose Spelling from the Edit menu, and then choose Edit User Dictionary.

2. In the User Dictionary dialog box, make any changes, and then click OK.

To	Do this
Add a word	For Entry, type the word, and then click Add.
Remove a word from the list	Select the word, and then click Remove.
Change a word	Remove the word from the list, type a replacement, and then click Add.

Importing or exporting a spelling dictionary

Choose FileMaker Help Index from the ? or Help menu, and then type:

- editing

Before you begin, make sure the currently installed dictionary is the one you want to import into or export from.

1. Choose Spelling from the Edit menu, and then choose Edit User Dictionary.
2. In the User Dictionary dialog box, click the Text File triangle, and then:

To	Do this
Import a text file	Click Import. (If necessary, locate the correct folder.) Then double-click the name of the file to import. (To cancel importing, press Command-period.)
Export a text file	Click Export. (If necessary, choose a different folder.) Type a name for the file to export to, and then click Save.

3. When importing or exporting is complete, click OK, and then click OK again.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- exporting dictionaries
- importing data

Chapter 2: Creating a database file

This chapter tells you how to design a database file:

- to use by itself
- to use as part of a relational database

This chapter also explains some limitations on options available when designing a file to use with FileMaker Pro Web Companion.

For information about creating a relational database, which includes more than one database file, see chapter 10, “Using data from related files.”

Important Before you read this chapter, be sure you know how to use FileMaker Pro Help, as explained in the preface, “Getting help.”

Planning a database file

Plan a database before you create it to save time and effort later on. Although you can change the design later, the more you plan ahead, the fewer changes you’ll need to make. Whether you plan to publish your database on the World Wide Web or not, the concepts are the same.

Follow these general steps when you plan a database:

1. Decide which categories of information you work with, and plan a separate database file for each major category.

   For example, for a small business, you might need one database file for products, one for customers, and another for employees.

2. Analyze your current information management system to determine the tasks you perform.

   For example, do you print mailing labels and invoices? What reports do you produce? Are there new tasks you want to do?

3. Decide what data you want the file to contain, and plan the fields to hold the data.

   For example, to print invoices, you need fields for a billing address, shipping address, quantity, product code, and so on, and calculated fields for subtotal, sales tax, shipping charge, and invoice total.

4. Determine relationships between your file and other files whose data you can use.

For example, if data you want already exists in another file, you can use it in the current file by defining a relationship to the other file and then defining lookups or adding fields from that file on a layout of the current file.

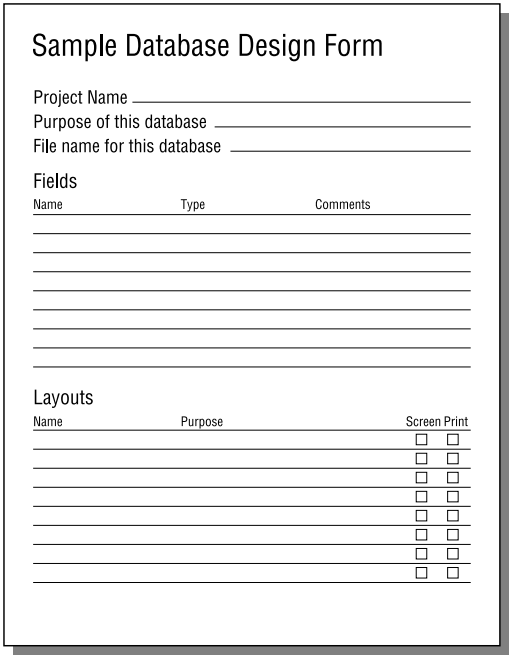
5. Decide what layouts you need, and plan a separate layout for each task.

   For example, plan layouts for data entry, order entry, printing mailing labels, printing form letters, and for each type of report you produce.

6. If others will use your database, think about who can use the file and which tasks they can perform.

   If security is important to your data, you can restrict who can do which tasks by assigning passwords and access privileges to the file.

7. Put your ideas on paper, listing the files you need and the fields for each file. Also list the forms and reports you will generate from each file.



Sample Database Design Form

Project Name _____

Purpose of this database _____

File name for this database _____

Fields

Name	Type	Comments

Layouts

Name	Purpose	Screen	Print
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

After you have all the basic parts in place, you can begin creating your database, as described in "Defining database fields" on page 2-3. Start with a simple design and use it for a while. You can change it as needed.

Keep these points in mind as you plan database fields:

- Use separate fields for first name and last name so you can search or sort records based on either.
- Use separate fields for city, state, and postal code. If you combine them, you can't sort records based on the individual fields.
- Make a separate field for titles (to hold values like Dr., Mr., and Ms.).

Defining database fields

When you create a file, you begin by defining the database fields. To define a new field, give it a name, and then select options that determine how the field interprets, enters, calculates, stores, and displays data. All these characteristics make up the *field definition*. After you define fields, you can add, change, or delete field definitions as needed.

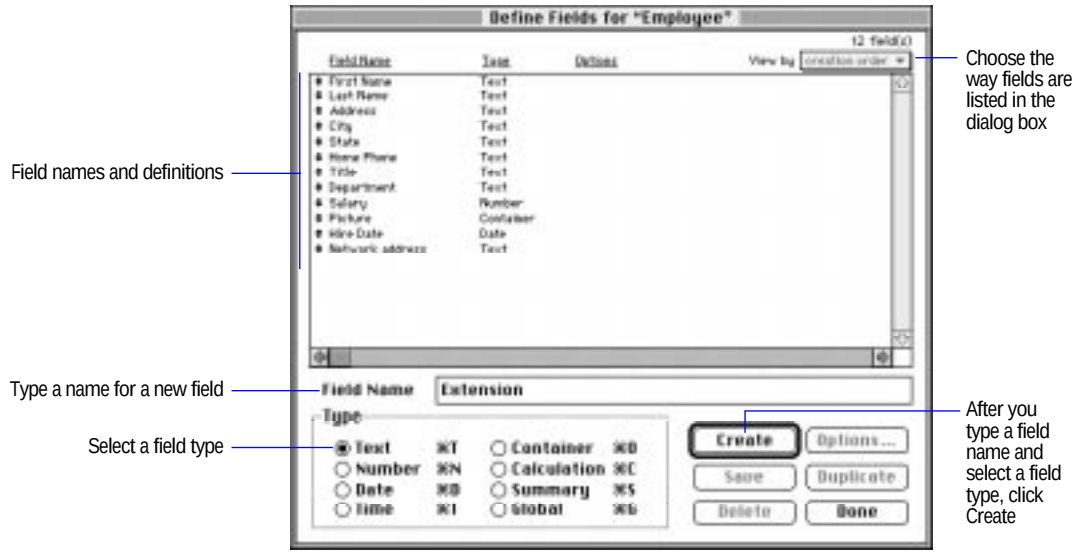
1. Create a file, or, in Browse or Layout mode, choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, for Field Name, type a unique name for the field.

   Don't use the following symbols or words: , (comma), +, –, *, /, ^, &, =, ≠, >, <, ≤, ≥, (,), ", :, ::, AND, OR, XOR, NOT, or a FileMaker Pro function name. Don't begin a field name to be used in a calculation formula with a period (.) or a number.
3. For Type, select a field type, and then click Create.

   See "Assigning a field type" on page 2-5.

4. Define options for the field.

If the field type is	Do this
Text, number, date, time, or container	In the field definitions list, double-click the field name (or select the field, and then click Options), and then set entry options for the field. See "Choosing data entry options" on page 2-7.
Calculation	In the Specify Calculation dialog box, define a formula for the field. See "Understanding formulas" on page 2-14.
Summary	In the Options for Summary Field dialog box, select summary options. See "Defining summary fields" on page 2-24.
Global	In the Global Field Options dialog box, select global options. See "Defining global fields" on page 2-10.



5. Define the fields you want for the file, and then click Done.

When the file is new, you see the fields in Browse mode. Otherwise, you return to where you were before you defined fields.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- adding new fields

Assigning a field type

When you define a field, you must decide the kind of data it will contain and then select the appropriate field type. FileMaker Pro uses the field type to interpret the data when sorting and performing calculations. The following table explains each field type.

Select this field type	If the field's data will be
Text	Up to 64,000 characters of letters, symbols, and numbers used as text. You can sort records based on a text field and use a text field in formulas for calculations and summary fields. Text fields are usually sorted alphabetically (from first character to last character in the alphabet, or last to first), starting with the first character in the field. For more information, see "Sorting records" on page 4-31.
Number	Up to 255 characters of numbers or other characters, of which only the numbers are treated as numeric. You can sort records based on a number field and use number fields in formulas for calculations and summary fields. Number fields are sorted numerically (lowest to highest or highest to lowest), based on the numeric part of the data
Date	Dates only. A date field must include at least the day and month portion (*dd* and *mm*) of a date. If you enter no year, and have not typed a separator character for a year, FileMaker Pro enters the current year for you. You can sort records based on a date field and use date fields in formulas for calculation and summary fields. Date fields are sorted chronologically (from earliest to latest or latest to earliest)
Time	Times only. A time field can contain only the hours, minutes, or seconds portion (*hh*, *mm*, and *ss*) of a time. You can sort records based on a time field and use time fields in formulas for calculation and summary fields. Time fields are sorted chronologically (from earliest to latest or latest to earliest)
Container	A graphic, sound, or QuickTime movie. You enter data in a container field in different ways, depending on the type of data. Container fields can be used in calculation fields and summary fields. See "Working with container fields" on page 4-6.
Calculation	The result of a calculation formula that uses field values from the current record or related records. The formula can use values of all field types. The result can be text, a number, date, time, or container. See "Understanding formulas" on page 2-14.
Summary	A value that's produced by summarizing field values from more than one record in the same file. See "Defining summary fields" on page 2-24.
Global	One value to be used in all records of the file. A global field can be text, number, date, time, or container. Use the value of a global field in calculations and scripts. You can't use a global field to find records. See "Defining global fields" on page 2-10.

Keep these points in mind:

- Because they often include non-numeric characters like hyphens or parentheses, define postal codes and telephone numbers as text fields, not number fields.
- You can't search or sort records based on container fields, but you can define text fields to describe or identify them. Then search and sort based on the description or identifying number of the field's value.
- You can change the way data is displayed in text, number, date, and time fields. See "Defining display formats for fields" on page 3-59.
- The characters displayed for the decimal separator and thousands separator in number fields, and the part separators in date and time fields, and the order in which date and time parts appear depend on the system formats set for the file and the display format for the field. See appendix B, "Working with international files," and "Defining display formats for fields" on page 3-59.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ fields, defining

Choosing data entry options

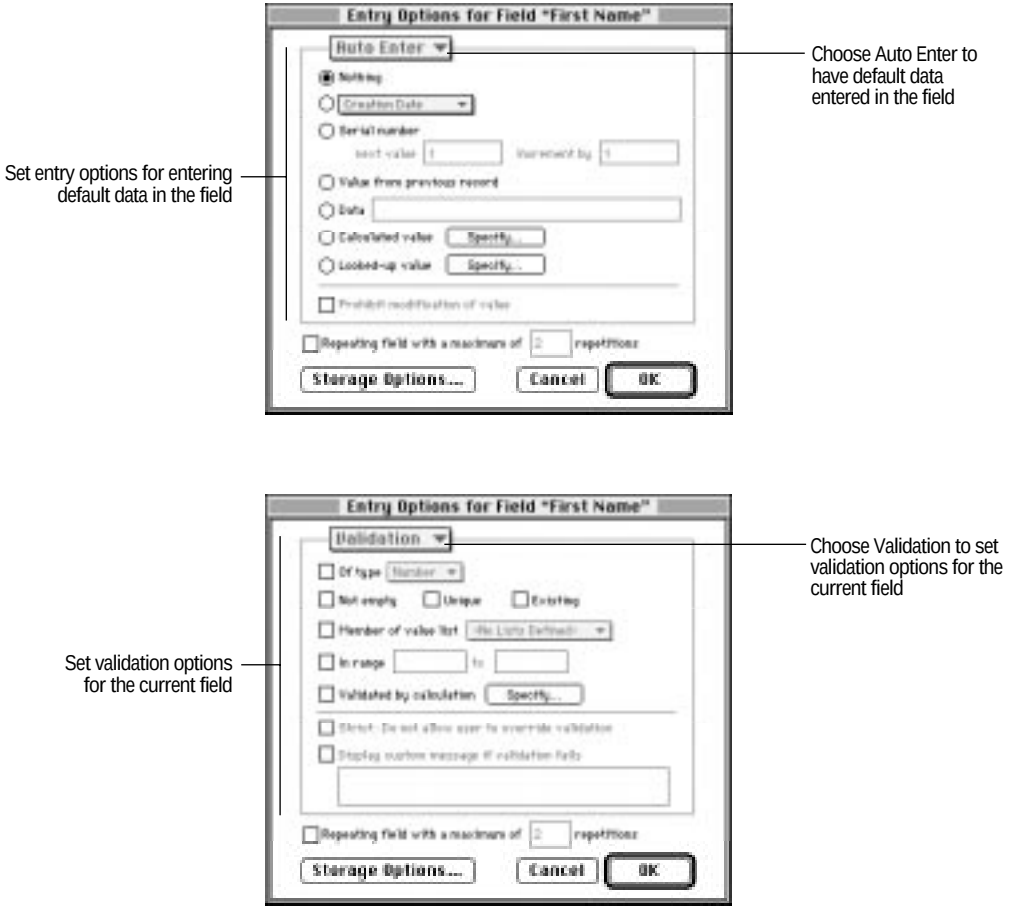
For each text, number, date, time, and container field, you can set or change options to make entering data fast and accurate. You can have default data entered in the field and have the data checked against validation requirements set for the field.

1. Create a file, or choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, double-click a field you want to set data entry options for.
3. In the Entry Options dialog box, choose the type of entry options to set from the pop-up menu (at the top of the dialog box).
   - To have a default value automatically entered in the selected field for each record, choose Auto Enter.
   - To have data in the field checked against validation requirements you set for the field in each record, choose Validation.
4. Define repetitions and storage options.
   - To make the field a repeating field, select Repeating field with a maximum of *n* repetitions, and then type the number of repetitions. (See “Defining repeating fields” on page 2-12.)To set options for indexing the field’s values, click Storage Options, and then select indexing options. You can also choose a language for indexing and sorting text fields. (See “To change the number of repetitions visible on a layout, see “Formatting repeating fields” on page 3-72.Indexing fields” on page 2-13.)

5. Select options for automatically entering and validating data.

For	To	Do this
Auto Enter	Turn off automatically entered data	Select Nothing
	Enter the date, time, or user name when the record was last created or changed	Choose an option from the pop-up menu
	Assign a unique, sequential number to the field in each record	Select Serial number, and then type a starting value (for example, 1001) and the number to increment by
	Enter the value from the previously accessed record	Select Value from previous record
	Enter data you specify	Select Data, and then type the data you want, up to 255 characters
	Enter the result of a calculation in the field	Select Calculated value, and then define the formula. (See the note at the end of this section and "Understanding formulas" on page 2-14.)
	Enter a value that's copied from a field in the same or a different file	Select Looked-up value, and then define the lookup. (See "Defining lookups between files" on page 10-11.)
	Prevent users from changing an automatically entered value	Select Prohibit modification of value
Validation	Check that the data is a number, date, or time	Select Of type and then choose a type from the pop-up menu
	Check that the field is not empty, or that the value is unique or already existing in the file	Select Not empty, Unique, or Existing
	Check that the value is in the value list you specify	Select Member of value list, and then choose a value list from the pop-up menu, or define a value list. (See "Defining value lists" on page 3-75.)
	Check that the value falls within the range you specify	Select In range, and then type a starting value and ending value for the range
	Check that the value matches the result of a calculation	Select Validation by calculation, click Specify, and then define a formula. The result must be Boolean—"true" or "false," "yes" or "no," and so on. (See "Understanding formulas" on page 2-14.) The result is false when the result is 0 or null (empty); otherwise the result is true
	Prevent users from entering invalid data	Select Strict: Do not allow user to override validation

For	To	Do this
	Display a message you specify when the data doesn't meet the validation requirements	Select Display custom message if validation fails, and then type a message (up to 255 characters)


Entry Options for Field "First Name"
Auto Enter
Choose Auto Enter to have default data entered in the field
Set entry options for entering default data in the field
Storage Options...
Cancel
OK
Entry Options for Field "First Name"
Validation
Choose Validation to set validation options for the current field
Set validation options for the current field
Storage Options...
Cancel
OK

6. Click OK, and then click Done.

Keep these points in mind:

- You can't set FileMaker Pro to enter data automatically for calculation, summary, and global fields.

- If you create or edit records using FileMaker Pro Web Companion, auto-entered data appears only after the record has been submitted from the browser software.
- Select Calculated value to calculate a value only when a record is first created or when a value in a field the calculation refers to changes (as long as the field with the calculation doesn't already contain a value). If necessary, you can enter a different value in the field (when Prohibit modification of field isn't selected). However, when you want a calculated value that's always up to date and which you can't change by entering data in the field, define the field as a calculation field. See "Defining database fields" on page 2-3 and "Understanding formulas" on page 2-14.
- When the data in a validated field doesn't meet the validation requirements, users see a warning message when they try to move out of the current record. If Strict: Do not allow user to override validation is set for the field, users must correct the data before moving out of the record. You can use Display custom message if validation fails to give users the data requirements.
- To save time during data entry and to validate fields, define value lists. Value lists aren't attached to any field definition. You can format value lists to display in a pop-up list or menu, or as checkboxes or radio buttons. See "Defining value lists" on page 3-75.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ data entry options

Defining global fields

A *global field* contains one value that's used for all records in a file. Use the value of a global field:

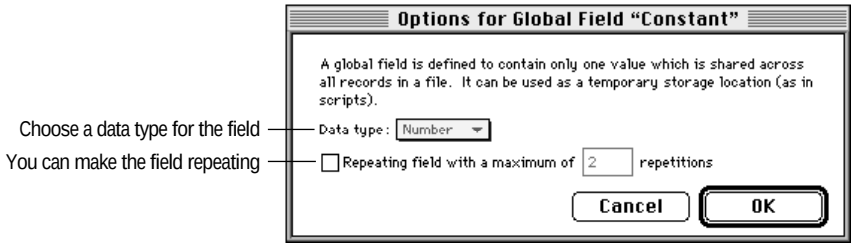
- to declare variables in If, Else, End If, Loop, End Loop, and Exit Loop If script steps
- for fields that rarely need to be updated. For example, use a global field to put your company logo (a graphic) and address (text fields) on several layouts. You can quickly update the field if needed without having to update each layout.
- as a fixed value to be used in calculations in all records in a file

You can also use a global field in layouts and calculations and as repeating fields. You can't use a global field for finding data.

1. Create a new file, or choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, for Field Name, type a name for the field.
3. For Type, select Global, and then click Create.
4. In the Global Field Options dialog box, select options.

To	Do this
Choose a data type for the field	For Data type, choose a type from the pop-up menu. (See "Assigning a field type" on page 2-5.)
Make the field repeating and set the number of repetitions	Select Repeating field with a maximum of *n* repetitions, and then type the number of repetitions. (See "Defining repeating fields" on page 2-12.)

5. Click OK, and then click Done.


Options for Global Field "Constant"
A global field is defined to contain only one value which is shared across all records in a file. It can be used as a temporary storage location (as in scripts).
Data type: Number
Repeating field with a maximum of 2 repetitions
Cancel
OK
Choose a data type for the field
You can make the field repeating

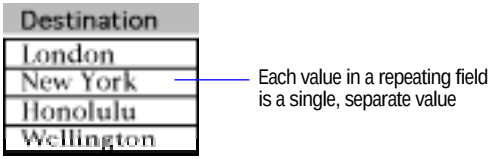
Note If you're working with global fields in a shared file, see "Working with shared files" on page 7-6.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- global fields

Defining repeating fields

A *repeating field* holds more than one value (up to 1000), each in a separate *repetition* (row) of a field of any type except summary. For example, use a repeating field to show all available tours for a cruise line.



You can use repeating fields for calculating values and finding and sorting records. FileMaker Pro includes all values in a repeating field for calculations, summaries, and find requests, even those that aren't visible in the current layout. For sorting, FileMaker Pro uses only the first value in a repeating field.

You can make a calculated field repeating when you define a calculation. (See "Writing formulas for calculation fields" on page 2-21.) You can make a global field repeating when you choose global field options. (See "Defining global fields" on page 2-10.)

To define a text, number, date, time, or container field to be repeating:

1. Create a file, or, in Browse or Layout mode, choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, double-click the name of the field to be repeating.
3. In the Entry Options dialog box, select Repeating field with a maximum of *n* repetitions, and then type the number of repetitions you want.

4. Click OK, and then click Done.

   To change the number of repetitions visible on a layout, see "Formatting repeating fields" on page 3-72.Indexing fields

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ repeating fields

FileMaker Pro indexes each value in fields used for these tasks (unless you deselect the automatic index option):

- validating fields with unique or existing validation criteria
- matching fields in a related or lookup file
- matching fields in a master file (to find data in a field based on the relationship)

You can index all field types (except container, summary, or global) to improve performance for tasks like finding data. Indexing uses additional disk space and can slow performance of some operations, especially in large files.

1. Create a new file, or, in Browse or Layout mode, choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, double-click the name of the field to index.
3. In the Entry Options dialog box, click Storage Options.
4. In the Storage Options dialog box, for Indexing, click On. If you are working with a text field, choose a language from the pop-up menu.

   In most cases, keep Automatically turn indexing on if needed selected. Otherwise, tasks like finding take much longer on unindexed fields.

Storage Options for Field "Month"
Indexing:
On
Off
Automatically turn indexing on if needed
Default language for indexing and sorting text:
Cancel
OK
Index each value in the current field
Select this to speed up finding on unindexed fields
Choose the language to index and sort values by

5. Click OK twice, and then click Done.

Keep these points in mind:

- You can set indexing options for a calculated field when you define the calculation. (See "Writing formulas for calculation fields" on page 2-21.)
- To use the index for data entry, see "Working with the index" on page 4-11.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

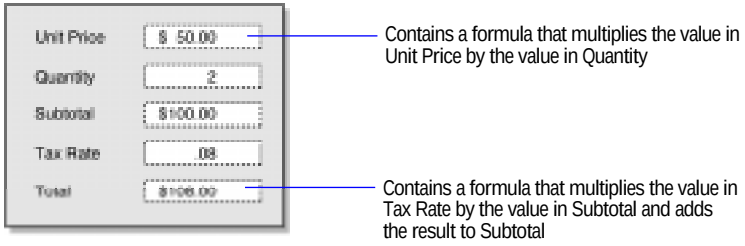
▸ index

Understanding formulas

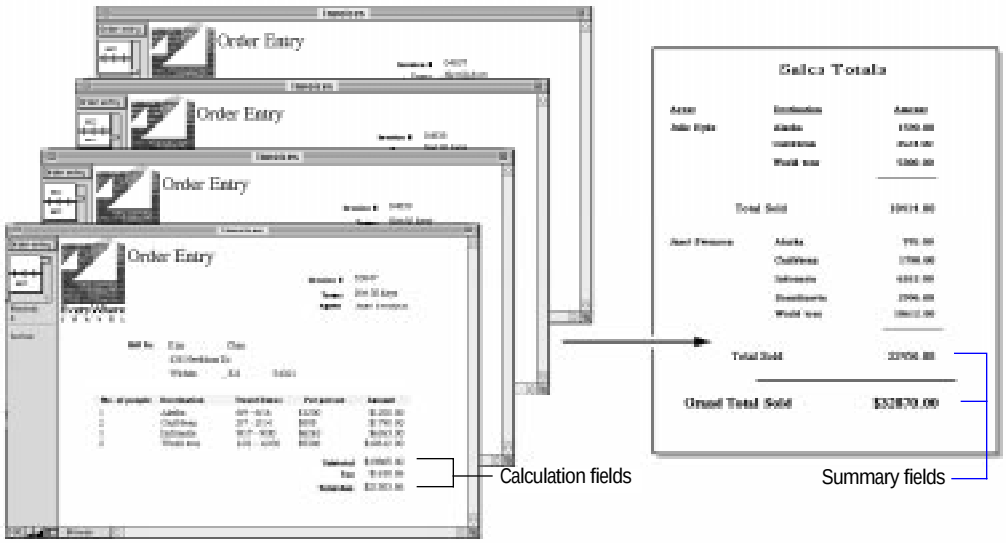
You write a *formula* (a specific operation on one or more values in the database) for a calculation or summary field. For example, suppose your file contains two number fields—Unit Price and Quantity—and one calculation field, Subtotal. You want to calculate a value for Subtotal in each record, so you write the calculation formula:

```
Unit Price * Quantity
```

for the Subtotal field. Then, each time you type values in Unit Price and Quantity, the formula multiplies those values and displays the result in Subtotal.


Unit Price
$ 50.00
Quantity
2
Subtotal
$100.00
Tax Rate
.08
Total
Contains a formula that multiplies the value in Unit Price by the value in Quantity
Contains a formula that multiplies the value in Tax Rate by the value in Subtotal and adds the result to Subtotal

Use a calculation field to calculate a result from values in other fields in the current record (or from other related records, using a relationship). Use a summary field to produce a result using values in more than one record in the database.



The values you calculate can come from all field types. You can produce different values in a summary field, depending on whether you're browsing all or some of the records, whether records have been sorted, and where you place the summary field on the layout.

The formula's result can be text, number, date, time, or container. The result of a calculation depends on the field type of the values it calculates and whether the field type is calculation or summary.

A formula contains one or more parts arranged in a particular order (called *syntax*) that determines the values to use and the operations to perform to produce the result you want. The following sections explain each formula part and its syntax.

Important In the United States, commas act as list separators in functions, formulas, and calculations. In other countries, semicolons might be used as list separators. The separator that is used depends on the operating system your computer uses, as well as the one used when the file was created.

Expressions

An *expression* is a value or any computation that produces a value. Expressions can be combined to produce other expressions.

Type of expression	Example
Text constant	`"London"`
Number constant	`2.15`
Field reference	`TaxRate`
Function	`Length(ShipToAddress)`
Combination of expressions	`((Total–Discount)*TaxRate)/100`

Constants

A *constant* is a fixed value that's part of the formula and doesn't change from record to record. A constant can be text, or a number, date, or time, like the text value "Europe" or the numeric value 0.05.

FileMaker Pro interprets the type of data of a constant value according to the way you type the constant in a formula. Be sure to type each constant in a consistent format. (Quotation marks indicate a text expression.)

For this type of data	Do this when you type a constant	Examples
Text	Enclose the text in quotation marks (")	`"Montréal"` `"514 555 1212"`
Number	Don't include thousand separators or currency symbols	`123` `1234.56`
Date	Use the value as a parameter of the Date function or TextToDate function. See appendix C, "Summary of functions."	`Date(2,1,1998)` `TextToDate("03/04/1998")`
Time	Use the value as a parameter of the Time function or TextToTime function. See appendix C, "Summary of functions."	`Time(4,14,32)` `TextToTime("02:47:35")`

Field references

A *field reference* is a field name that acts as a placeholder for the field's value. When FileMaker Pro evaluates the formula in the current record, the value in the field represented by the field reference is used in the calculation. (Quotation marks indicate a text expression.)

This expression	Returns
`Invoice Total*0.075`	7.5 when the value in the Invoice Total field is 100
`First Name & " " & Last Name`	"John Jones" when the value in the First Name field is "John" and the value in the Last Name field is "Jones"
`Relationship Name::Invoice Total*0.075`	7.5 when the value in the Invoice Total field is 100. The Invoice Total field is located in a related database The syntax is *Relationship name::Field name*

Operators

You combine expressions using *operators*, symbols that determine which operation to perform on the expressions. You place operators between the expressions you want to perform the operation on, as in:

```
Subtotal + Tax
```

Each operator has a *precedence*, which determines the order in which calculations are performed in a formula containing more than one operator. FileMaker Pro evaluates operators from left to right and performs multiplication and division before addition and subtraction. You can change the precedence by enclosing the expression you want calculated first in parentheses.

This expression	Returns
2+3*2	8
(2+3)*2	10

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- operators

Mathematical operators

Use the following mathematical operators with numeric expressions.

Symbol	Name	Definition	Examples
+	Addition	Adds two values	`2+2` `Subtotal+Sales Tax`

–	Subtraction or Negation	Subtracts the second value from the first, or changes the sign to + or –	`2–2`
			`InvoiceTotal–Discount`
			`–2`

*	Multiplication	Multiplies each value	`Subtotal*Sales Tax` `DaysLate*.01*LeasePayment`
/	Division	Divides the first value by the second	`Kilometers Driven/Liters` `Inches/12`
^	Power of, or Exponentiation	Raises the first value to the power of the second value	`A^2+B^2` returns ($A^2 + B^2$) `Radius^3` returns ($Radius^3$)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ mathematical operators

Comparison operators

Comparison operators compare two expressions and return either true or false (sometimes called a *Boolean expression*). Arithmetically, a result of true equals 1 and a result of false equals 0.

Symbol	Name	Definition	Examples
=	Equal to	True when both items are equal	`38=39` returns false `38=38` returns true
≠ or <>	Not equal to	True when the items are not equal	`38≠39` returns true `38≠38` returns false
>	Greater than	True when the value on the left exceeds the value on the right	`5>6` returns false `19>1` returns true
<	Less than	True when the value on the left is less than the value on the right	`5<6` returns true `19<1` returns false

Symbol	Name	Definition	Examples
≥ or >=	Greater than or equal to	True when the value on the left is greater than or equal to the value on the right	5≥6 returns false 5≥5 returns true
≤ or <=	Less than or equal to	True when the value on the left is less than or equal to the value on the right	5≤6 returns true 19≤18 returns false

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ comparison operators

Logical operators

When you want FileMaker Pro to perform a calculation based on two or more conditions, use *logical operators* to describe such conditions.

Operator	Definition	Example
AND	True only when both of two values are true. The result is: ▪ true when `true AND true` ▪ false when `false AND true` ▪ false when `false AND false`	`InvoiceTotal<100 AND SalesTax<6`
OR	True when either of two values is true. The result is: ▪ true when `true OR true` ▪ true when `true OR false` ▪ false when `false OR false`	`InvoiceTotal<100 OR SalesTax<6`
XOR	True when either, but not both, of two values is true. The result is: ▪ false when `true AND true` ▪ true when `false AND true` ▪ false when `false AND false`	`InvoiceTotal<100 XOR SalesTax<6`
NOT	Changes a value within parentheses from false to true or from true to false. The result is: ▪ false when `NOT(true)` ▪ true when `NOT(false)`	`NOT InvoiceTotal>1000`

Use AND, OR, or XOR to combine two expressions; use NOT with only one expression.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ logical operators

Text operators

Use the following text operators with text expressions. (Double quotation marks indicate a text expression.)

Symbol	Name	Definition	Examples
&	Concatenation	Appends the text string on the right to the end of the text string on the left	`"XXX" & "ZZZZZ"` returns `"XXXZZZZZ"`
" "	Text constant	Marks the beginning and the end of a text constant. Quotation marks without text between them indicate a blank space. If you enter text into a formula without using quotation marks, FileMaker Pro interprets the text as a field name or function name. To put a quotation mark in a text constant, precede it with another quotation mark.	`"Sydney, NSW"` returns Sydney, NSW `""` returns an empty (null) value `"The report said ""Confidential"" on the top"` returns The report said "Confidential" on the top
¶	Return marker	Inserts a paragraph return in a text constant	`"M.T.N.Trek¶Sporting¶ Equipment"` returns "M.T.N. Trek Sporting Equipment" (The ¶ symbol must be enclosed within the quotation marks of the text constant)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ text operators

Stored and unstored calculation results

You can have FileMaker Pro:

- perform a calculation whenever the data that the calculation is based on changes, and store the result in the calculated field (a s*tored* result)
- perform a calculation and display the result only when you need to use the data—for example, to browse or print records—(an *unstored*, or *virtual*, result)

In most cases, FileMaker Pro makes a field stored when you define the field. You can change the storage type to unstored.

Keep these points in mind:

- FileMaker Pro makes a calculated field unstored when its formula refers to a global field, an unstored calculated field, a related field, or a calculation that includes a summary field.
- Stored results use more disk space. Unstored results take more time to calculate.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ calculation fields

Functions

A *function* is a predefined, named formula that performs a specific calculation and returns a single, specific value. You type only the function, and FileMaker Pro performs the calculation it represents. You can use functions by themselves or combine them with other functions or expressions. For information about specific functions in FileMaker Pro, see appendix C, “Summary of functions.”

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

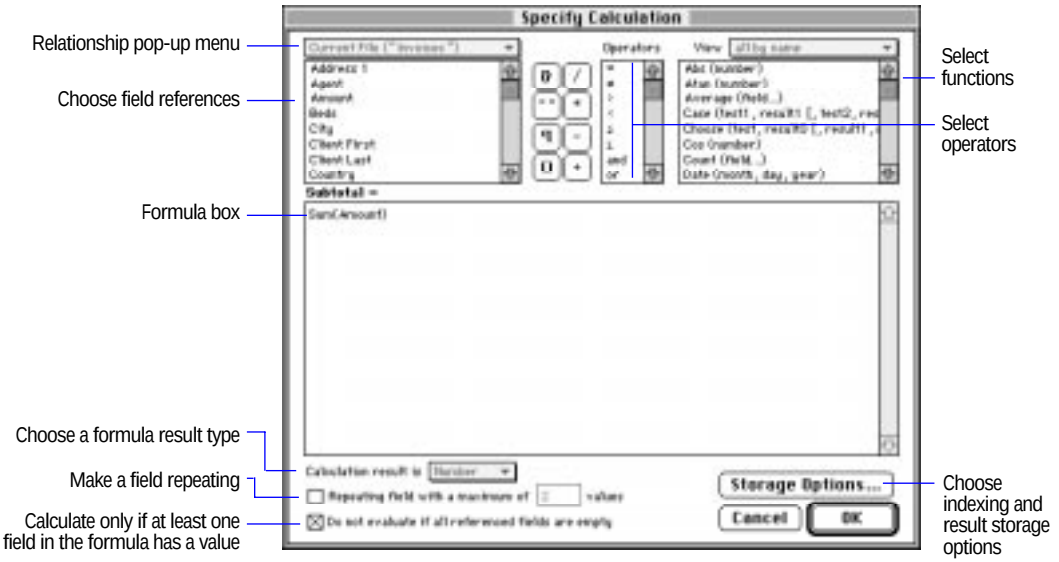
▸ functions, using

Writing formulas for calculation fields

1. Create a file, or choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, for Field Name, type a name for the field.
3. For Type, select Calculation, and then click Create.

4. In the Specify Calculation dialog box, define the formula.

To	Do this
Add a field reference	In the formula box, click where you want the field reference to appear. In the list of field names, double-click a field name
Add a mathematical or text operator	In the formula box, click where you want the operator to appear. In the keypad, click an operator. (Quotation marks and parentheses are copied to the formula as a pair, with the insertion point blinking in the middle)
Add a comparison or logical operator	In the formula box, click where you want the operator to appear. For Operators, choose an operator from the list
Add a constant value	In the formula box, type the value. (See "Constants" on page 2-16.)
Add a function	In the formula box, click where you want the function to appear. From the functions list, double-click a function. (To see a category of functions, for View, choose a category.) In the formula box, replace the placeholder parameter with the value or expression you want



5. Select calculation options for the field.

To	Do this
Make the calculated field repeating	Click Repeating field with a maximum of *n* values, and then type the maximum number (up to 1000) of repetitions you want
Set the field type of the result	For Calculation result is <value>, choose a field type for the result. Be sure to choose the correct type for the result you want
See fields from a different file	Choose a filename from the relationship pop-up menu. (For more information about relationships, see "Understanding relationships" on page 10-9.)
Have FileMaker Pro perform a calculation even when all referenced fields have no value (are empty)	Deselect Do not evaluate if all referenced fields are empty. (Do this when you always want FileMaker Pro to calculate a result, even if the field is empty or has never been modified.) Select this option when you don't want FileMaker Pro to evaluate the calculation until one of the referenced fields has a value (so you don't display zero as a result)

6. To select indexing and storage type options for the field, click Storage Options, select options, and then click OK.

To	Do this
Make the calculation result unstored	Select Do not store calculation results—calculate only when needed. To store the result in the field, deselect the option
Index the result	For Indexing, select On. To remove indexing, select Off. (See "To change the number of repetitions visible on a layout, see "Formatting repeating fields" on page 3-72.Indexing fields" on page 2-13.)
Specify the language for finding and sorting indexed values	Choose the language from the pop-up menu. (See "To change the number of repetitions visible on a layout, see "Formatting repeating fields" on page 3-72.Indexing fields" on page 2-13.)

Select this when you want an unstored result

7. Click OK, and then click Done.

Keep these points in mind:

- When you type values, expressions, functions, and parameters, the letters can be uppercase or lowercase. FileMaker Pro doesn't consider case for calculation purposes.
- When you use a repeating field in a calculation, the other parts of the formula must be compatible with that field.

Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ calculation fields

Defining summary fields

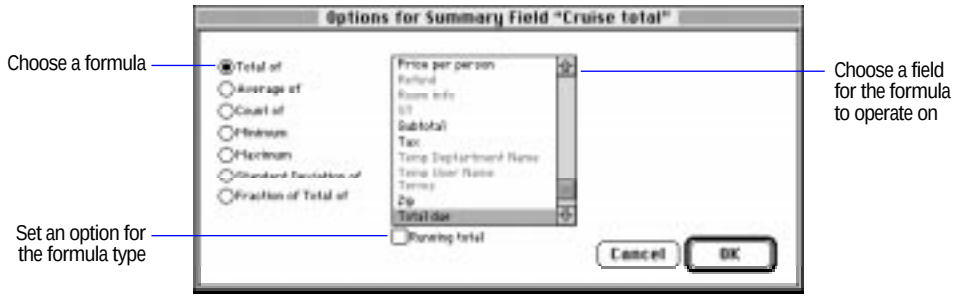
Important The value in a summary field depends on the layout part in which you place the summary field, so you must know about parts and summary parts to get the results you want. Before you define a summary field, see "Working with layout parts" on page 3-24 and "About summary layout parts" on page 3-29.

1. Create a new file, or choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, for Field Name, type a name for the field.
3. For Type, select Summary, and then click Create.
4. In the Options for Summary Field dialog box, select the type of summary to perform, and then select the name of the field that contains the values to summarize.

To summarize values in a field in the found set of records by	Select
Calculating the total of values in the field	Total of
Calculating the average of values in the field	Average of
Counting the number of records that contain a value for the field	Count of
Finding the lowest number, or the earliest date or time, for a field	Minimum
Finding the highest number, or the latest date or time, for a field	Maximum
Calculating the standard deviation from the mean of the values in a field. (The formula is n-1 weighted, following the normal standard deviation. For population standard deviation, see step 5)	Standard Deviation of
Calculating the ratio of the value in the field to the total of all the values in that field. (For example, find what fraction of total sales can be attributed to each individual sales person)	Fraction of Total of

5. If you want, select a summary option, if applicable to the summary type.

For this summary type	To	Select
Total of	Show the cumulative total for the current and all previous records	Running total
Average of	Determine the average in one field based on a value in another field that's used as a weight factor	Weighted average. In the list of fields that appears, select a field name for the averaged values
Count of	Show the cumulative count of the current and all previous records	Running count
Standard Deviation of	Calculate population standard deviation, where the formula is n-weighted	By population
Fraction of Total of	Define a subset of the group to sort by	Subtotaled. In the list of fields that appears, select a field name for the subtotaled values



6. Click OK, and then click Done.

Choose FileMaker Help Index from the ? or Help menu, and then type:

- summary fields

Changing field definitions

Important Keep the following in mind:

- Deleting a field from a file in the Define Fields dialog box permanently and irretrievably deletes the field definition and all the data in that field in all your records. Before you delete a field from a file, be sure you don't need any data the field contains. To delete a field from only a layout, see "Deleting a field from a layout" on page 3-59.
- When you change the definition of a field that contains data, the data in that field could be affected. In addition, changing the field type to container, calculation, summary, or global erases data permanently and irretrievably.

1. Open the file you want to change, and choose Define from the File menu and then choose Fields.
2. In the Define Fields dialog box, make your changes.

To	Do this
Change a field name	In the field definitions list, select the field to change. For Field Name, type or paste the new name, and then click Save. FileMaker Pro also changes the field name in layouts and field references in formulas
Duplicate a field definition	In the field definitions list, select the field to duplicate, and then click Duplicate. The new field appears at the end of the list with copy added to the name. You can change the field name
Change the field type	In the field definitions list, select the field, select a field type, and then click Save. (See "Assigning a field type" on page 2-5.)
Change data entry options	In the field definitions list, double-click the field, and then make your changes. (See "Choosing data entry options" on page 2-7.)
Change a formula	In the field definitions list, double-click the field, and then make your changes. Once you exit the Define Fields dialog box, FileMaker Pro recalculates the value for every record in the database
Reorder field definitions	For View by, choose an option from the pop-up menu. To define a custom order, use the double-arrow pointer to the left of a field definition to drag an item to another location on the list. (FileMaker Pro uses the order for all dialog boxes and when it creates Standard and Single-page form layouts.) Reordering field definitions does not affect existing layouts
Delete a field from the file (and from all layouts that contain the field)	In the field definitions list, click the field, click Delete, and then click Delete again

3. Click Done.

Note You can't delete a field that's used in a formula. You must delete the calculation field or remove the field reference in the formula before you delete the field. You also can't delete a field used in a calculation within a script or a field used in a relationship definition.

If a field is placed on a layout in a related database, and that field is later deleted, a placeholder for the deleted field remains in the related database. The placeholder contains the text ::<Field Missing>.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- field definitions

Chapter 3: Laying out and arranging information

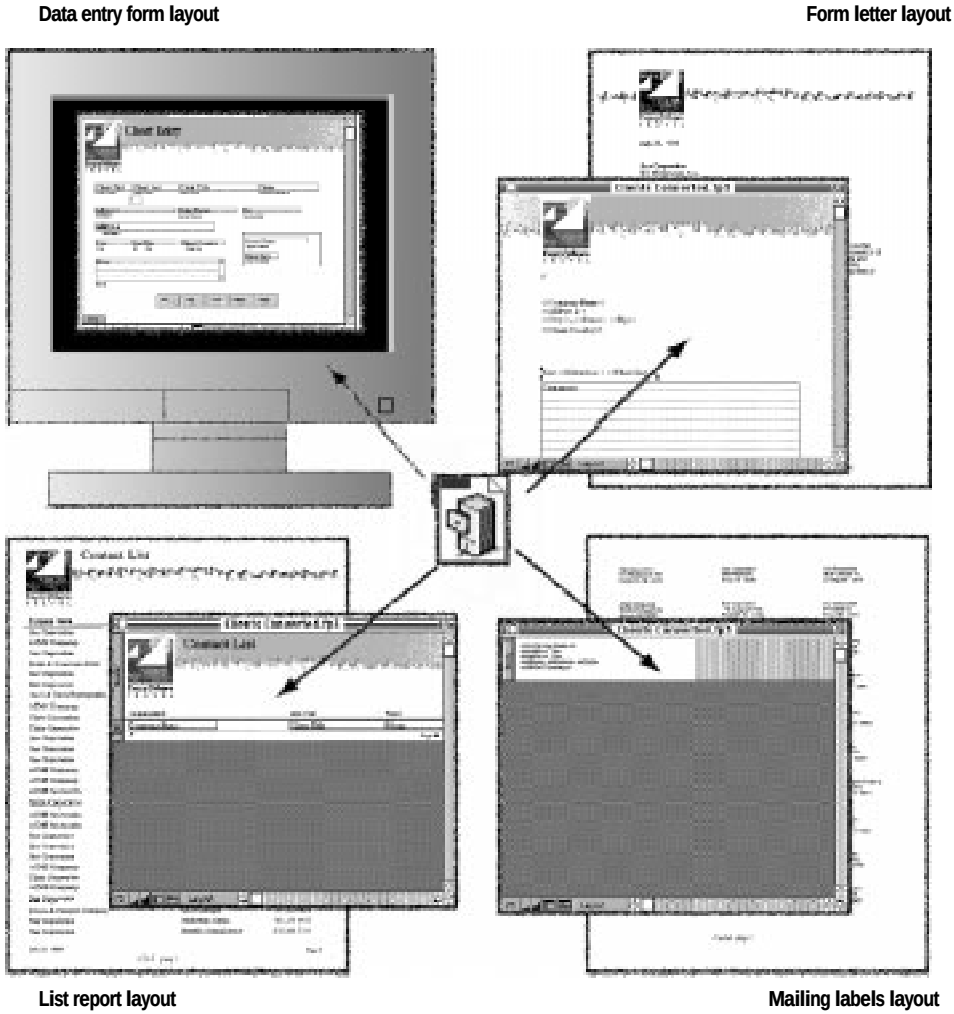
This chapter tells you how to create, edit, arrange, and format layouts to bring together information and graphic elements for display or printing. Layouts can be displayed on one computer or on a network of computers.

Important Before you read this chapter, you need to know how to design a database file, as explained in chapter 2, “Creating a database file.” In addition, be sure you know how to use FileMaker Pro Help, as explained in the preface, “Getting help.”

Understanding layouts

A FileMaker Pro layout presents data contained in a database. Layouts determine the appearance of data and organize it for viewing, reporting, finding, or data entry. A layout does not store data.

Use a layout to selectively display fields in a file. You can have more than one layout for a file (for example, design separate layouts for entering data, summary reporting, printing mailing labels, or publishing a database on the Web using FileMaker Pro Web Companion). You can have as many layouts for each file as disk space or maximum file size allows. You can change a layout’s design without affecting the data or other layouts for the file. When you change data in a field on a layout, the changes are reflected in the same field on other layouts for the database.



In a layout you:

- add, arrange, and format the fields you want to use
- create summaries of data you want summarized (like a grand total)
- specify how to print records
- add graphics and text, to add emphasis and interest

Note Layouts used with FileMaker Pro Web Companion Instant Web Publishing do not display graphics or text objects when viewed on the Web. You can create custom HTML pages that include graphics and text objects when you use FileMaker Pro Web Companion Custom Web Publishing. For more information, see chapter 11, “Publishing files on the Web.”

Text: Use for titles, column headings, field labels, instructions, and form letters

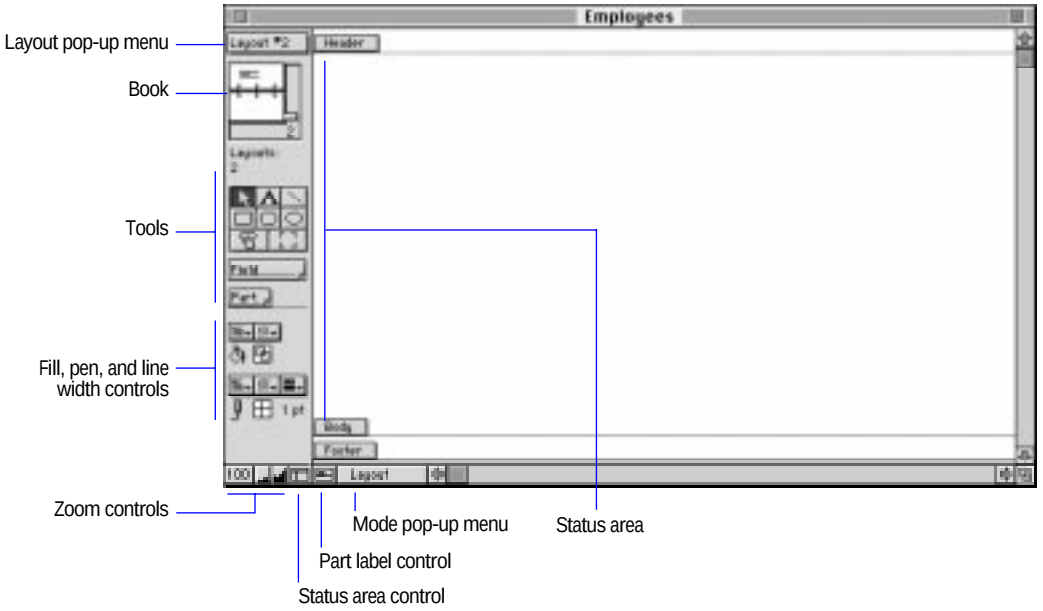
Fields: Use for entering and displaying data

Parts: Use headers, footers, the body, and summaries to divide a layout into special purpose areas

Graphic objects: Use lines, rectangles, rounded rectangles, ovals, and graphics anywhere on a layout to add interest and emphasis

The page: The chosen printer, current page setup, and layout type determine how information looks on the printed page

You make changes to a layout by using the tools available in Layout mode.

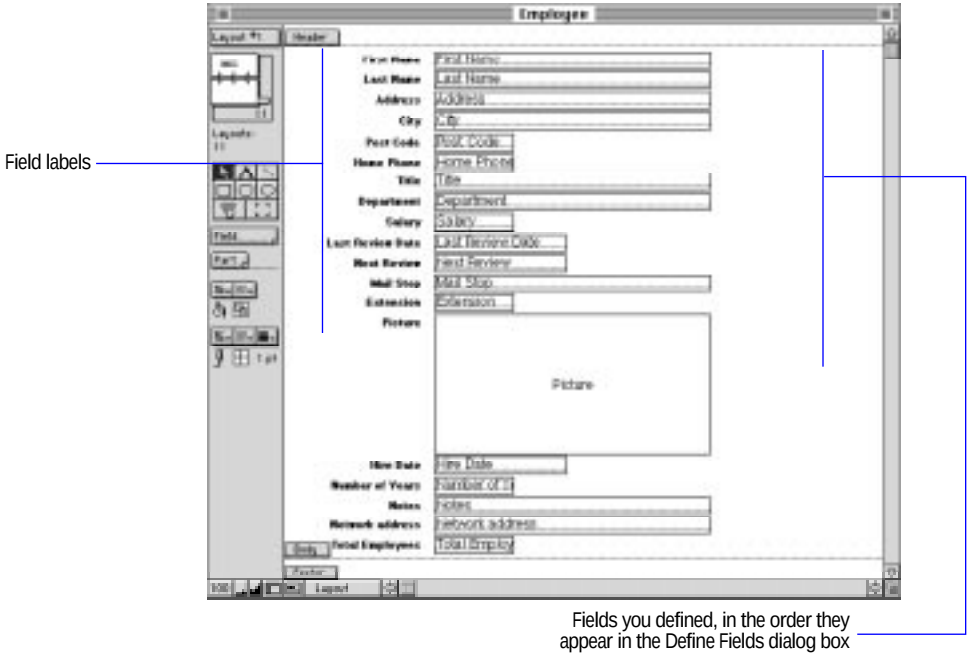


? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- layouts, managing

Working with predefined layout types

FileMaker Pro creates the first layout, a Standard layout, when you finish defining fields for a new file. A Standard layout contains all the fields in the database file. It appears in Browse mode, ready for you to enter data.



In addition to this layout, FileMaker Pro includes other predefined layout types. Use them for other purposes, like displaying and printing data as a columnar report or on mailing labels. You can use the predefined layout types as they are, or change them to suit your needs.

To use a predefined layout type, choose New Layout from the Mode menu, and then select a layout type. To change the layout, use the tools and commands in Layout mode to tailor the layout for your needs.

Use this layout type	To display
Standard	All the fields in the database file, with field labels, on separate lines in the viewing order set in the Define Fields dialog box. You see one record per screen. The layout includes a body and a blank header and footer
Columnar report	The fields you want, in columns from left to right, with a header that includes field labels as column headings. If all fields don't fit across the body, FileMaker Pro wraps them to the next line. You see many records per screen. This layout includes a blank footer
Extended columnar	The fields you want (in columns, with a header that includes field labels) without wrapping fields to the next line. You can adjust the field size to see a record on a single line. You see many records per screen. This layout includes a blank footer
Single-page form	All the fields in the database file, with field labels, on separate lines in the viewing order set in the Define Fields dialog box. It's like a Standard layout, but without a header or footer
Labels	The fields you want, in the arrangement you choose to print on mailing label stock
Envelope	The fields you want, in the arrangement you choose to print on a standard business envelope
Blank	The fields you want. A blank layout includes a blank header, body, and footer

FileMaker Pro considers the printer and page setup information when it displays boundaries and measurements on the layout. When you need to fit something on the page in a certain way, such as a layout to print data on preprinted forms, first use the Chooser to choose your printer. Then select options in the Page Setup dialog box.

Keep these points in mind:

- To see how a layout displays information on the screen, choose Browse from the Mode menu. To see how a layout will print, choose Preview from the Mode menu.
- You can display a specified layout every time you open a document. See “Setting document preferences” on page 9-7.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

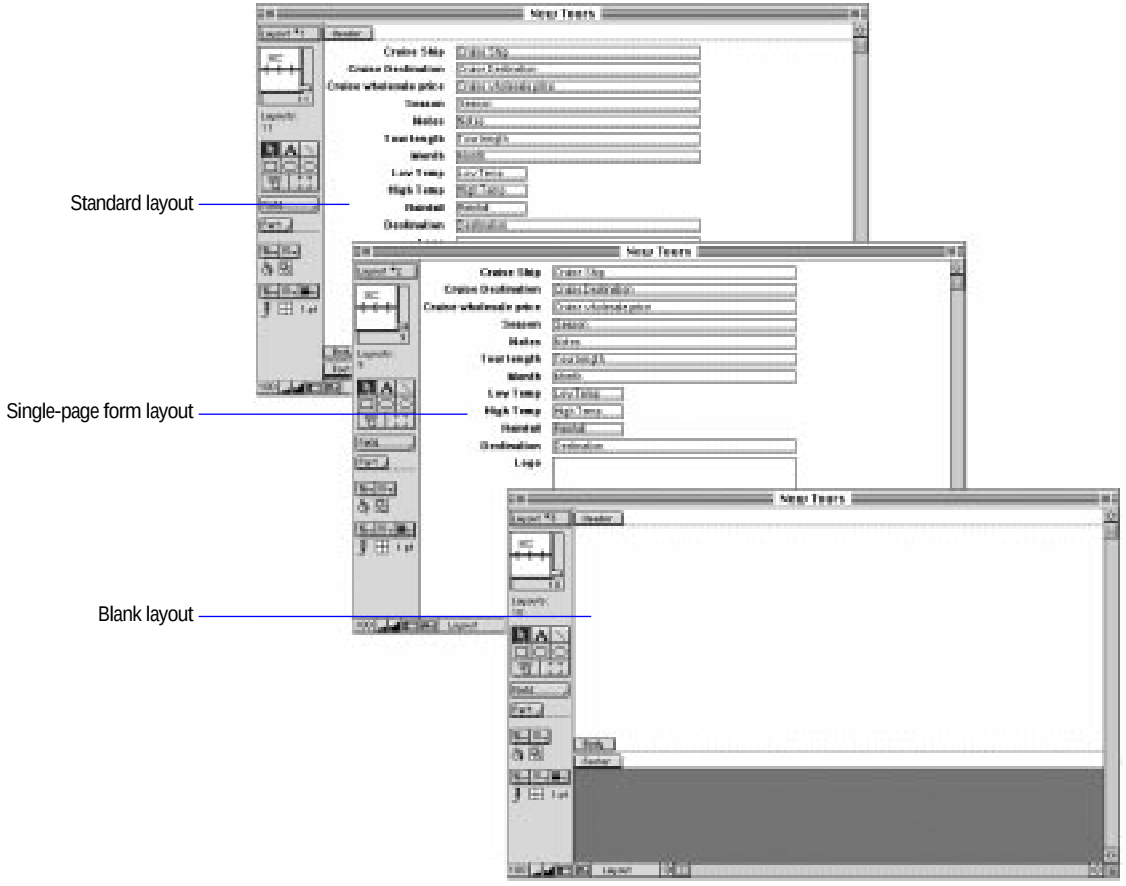
▸ predefined layouts

Using Standard, Single-page form, and Blank layouts

Standard, Single-page form, and Blank layouts are good for browsing and data entry. You can view or add records one by one, with or without headers and footers. With a Blank layout, you build a custom browse or entry screen.

The Standard layout is a good choice for use with FileMaker Pro Web Companion Instant Web Publishing. Text styles and graphics do not display when you publish a database using Instant Web Publishing, so a basic layout – such as Standard, Single-page form, with headers and footers deleted if you like – is all that is necessary. For more information see chapter 11, “Publishing files on the Web.”

A Standard layout contains all the database fields in the body of the layout, in the viewing order set in the Define Fields dialog box. You see the field names as field labels to the left of the fields, and a blank header and footer. A Single-page form layout looks like a Standard layout, but it doesn't have a header and a footer, and it's vertically the size of one page (although you can resize it if you like). A Blank layout contains a blank header, body, and footer. You add the fields for a Blank layout.



Creating Standard, Single-page form, and Blank layouts

1. In Layout mode, choose New Layout from the Mode menu.
2. In the New Layout dialog box, for Type, select Standard, Single-page form, or Blank.

3. Select other options, and then click OK.

To	Do this
Give the layout a different name	For Layout Name, type a name
Include or exclude the layout in the layout pop-up menu	To include the layout, select Include in layouts menu. To exclude the layout, deselect this option. (For example, you might exclude layouts when you want to give users access only to a particular layout)

4. To enhance or modify the layout, see the appropriate sections later in this chapter.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

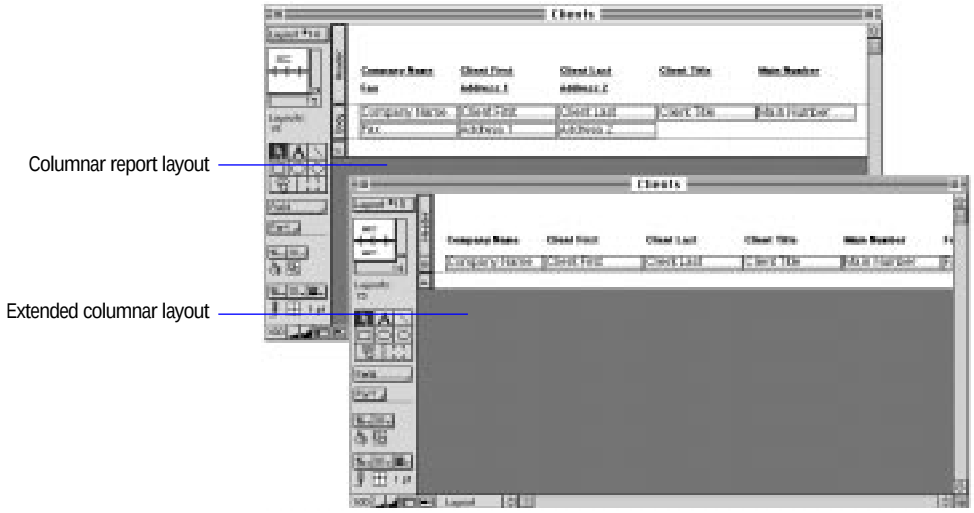
- blank layout
- single-page form layout
- standard layout

Using Columnar report and Extended columnar layouts

Use the Columnar report and Extended columnar layouts for reporting, printing, and viewing more than one record at a time in Browse mode.

A Columnar report layout displays and prints fields in columns. Fields are displayed from left to right across the body, in the order you specify. Fields that don't fit wrap to multiple lines. Field names appear in the header as column headings. If the fields wrap to more than one line, column headings are stacked. The footer is blank.

An Extended columnar layout displays all fields on one line across the page. You see each record in one row across the layout, with no wrapping fields or stacked headings. Use an Extended columnar layout for browsing; any objects that extend beyond the right edge of the page won't print. You can also use this layout if the selected fields don't fit across the page and you intend to make some fields smaller to fit the data on the page.

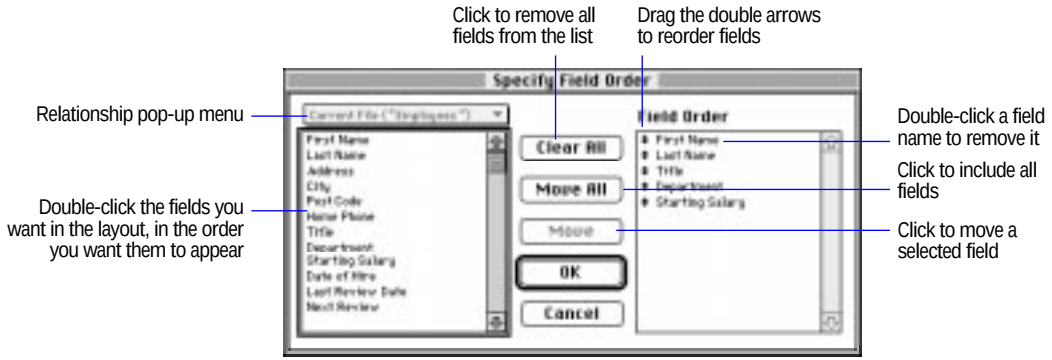


Creating Columnar report and Extended columnar layouts

1. In Layout mode, choose New Layout from the Mode menu.
2. In the New Layout dialog box, for Type, select Columnar report or Extended columnar.
3. Select other options, and then click OK.

To	Do this
Give the layout a different name	For Layout Name, type a name
Include or exclude the layout in the layout pop-up menu	To include the layout, select Include in layouts menu. To exclude the layout, deselect this option. (For example, you might exclude layouts when you want to give users access only to a particular layout)

4. In the Specify Field Order dialog box, choose fields for the layout, and then click OK.


Click to remove all fields from the list
Drag the double arrows to reorder fields
Relationship pop-up menu
Double-click the fields you want in the layout, in the order you want them to appear
Double-click a field name to remove it
Click to include all fields
Click to move a selected field
Specify Field Order
Field Order
Clear All
Move All
Move
OK
Cancel

5. To enhance or modify the layout, see the appropriate sections later in this chapter.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- columnar report layout
- extended columnar layout

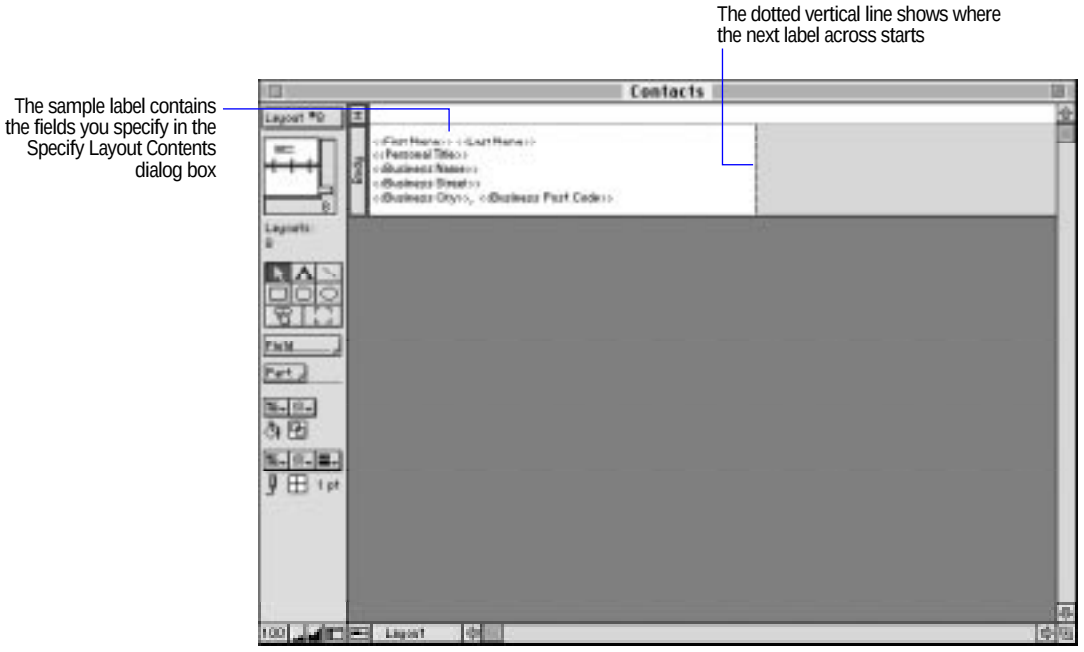
Using Labels layouts

To set up a Labels layout, you can:

- choose from many preset label sizes. Match the number on your label stock with an option in the label measurements list in the Label Setup dialog box. When you choose a label type, FileMaker Pro prepares a layout based on the preset dimensions.
- specify your own label dimensions. Measure your labels and match them to the dimensions of a preset label type. If you use label stock that doesn't match a label type, set custom measurements for your labels.

Important Use a Labels layout only to arrange and print data in a format suitable for labels. Labels layouts do not use fields, they use a special format of text surrounded by angle brackets (<< >>). Because of this, you can't add data to a database file using a Labels layout. To add data, use a different layout type.

For all labels layouts, you specify the data to print on each label. For a custom labels layout, specify the number of labels across the page and the label dimensions. FileMaker Pro then divides the body of the layout into the number of labels across the page. The leftmost label is a sample of a single label on a layout, and the rest of the labels across the page are dimmed.


The dotted vertical line shows where the next label across starts
The sample label contains the fields you specify in the Specify Layout Contents dialog box
Contacts

Setting up to print on labels

Choose FileMaker Help Index from the ? or Help menu, and then type:

- labels layout

- Before you set up a Labels layout, select a printer and set up the page for the size of your label stock. If you print on a laser or ink jet printer, set the paper size to match your sheet of labels.

- If you use continuous-feed stock (like tractor-feed labels) and a dot matrix printer, create a custom paper size equal to the height of one label. Use a custom paper size to minimize the back-and-forth movement of the platen and save label paper.

To	Do this
Select the printer	Choose Chooser from the Apple menu, and then select a printer
Set a paper size for a laser or ink jet printer	Choose Page Setup from the File menu. Select the size of the mailing label sheets you plan to use (usually US Letter in the U.S. and A4 elsewhere), and then click OK
Create a custom size for a dot-matrix printer	Choose Page Setup from the File menu. Select a Paper option you rarely use. At the Edit Paper Sizes options, for Name, type a name, type values for Width (the width of a sheet of labels) and Height (the height of one label, up to 36 inches), and then click Save. Select No Gaps Between Pages, and then click OK

Keep these points in mind:

- Depending on the printer and version of the system software you use, the Page Setup dialog box might contain different options. See your printer manual.
- To make sure the printer uses the full paper height for each label when you're using a dot-matrix printer, select No Gaps Between Pages.
- If you change the dimensions of a standard page size in the Page Setup dialog box and you're using a dot-matrix printer, change the name to recognize the dimensions as custom. To restore the preset size, click Restore.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ printing, labels

Creating a Labels layout

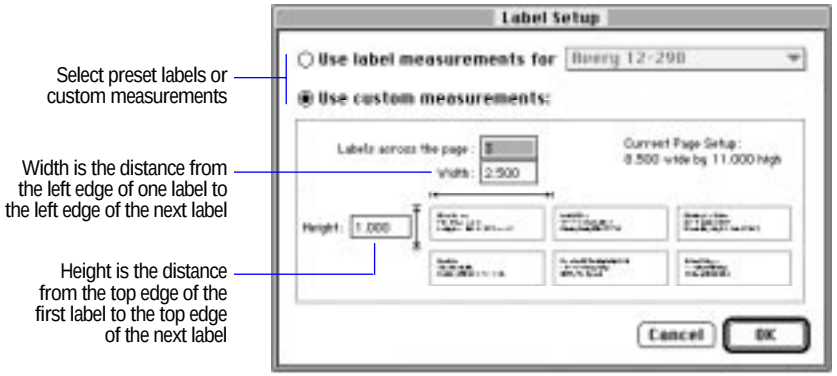
1. In Layout mode, choose New Layout from the Mode menu.
2. In the New Layout dialog box, for Type, select Labels.
3. Select other options, and then click OK.

To	Do this
Give the layout a different name	For Layout Name, type a name

To	Do this
Include or exclude the layout in the layout pop-up menu	To include the layout, select Include in layouts menu. To exclude the layout, deselect this option. (For example, you might exclude layouts when you want to give users access only to a particular layout)

4. In the Label Setup dialog box, select options, and then click OK.

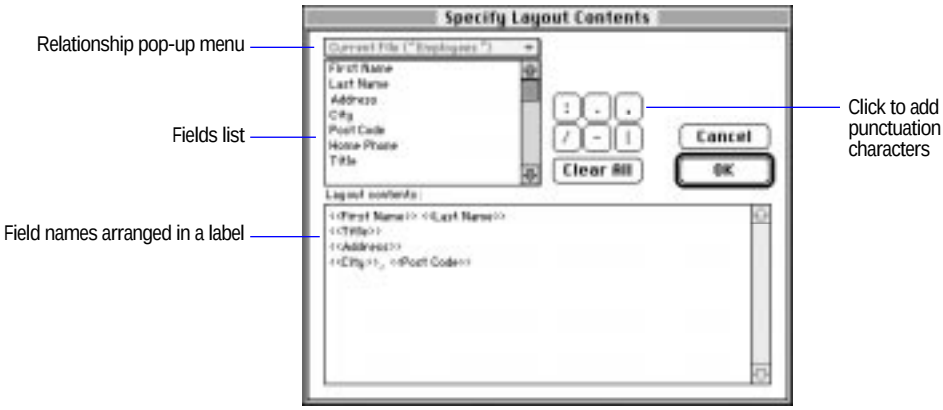
To	Select
Use preset label dimensions	Use label measurements for and then choose a label option
Create custom measurements	Use custom measurements, and then type values for Labels across the page, Width, and Height. See "Note Depending on the labels you choose, the layout may contain a blank header. If the first label starts at the top edge of the paper, set the header height to the height of the label so that printing starts on the second row of labels on the page.Creating custom labels" on page 3-16.


Label Setup
Use label measurements for
Use custom measurements:
Labels across the page:
Width:
2.500
Current Page Setup:
Height:
1.000
Cancel
OK
Select preset labels or custom measurements
Width is the distance from the left edge of one label to the left edge of the next label
Height is the distance from the top edge of the first label to the top edge of the next label

5. In the Specify Layout Contents dialog box, select and arrange fields for the labels, and then click OK.

To	Do this
Select fields for the labels	In the fields list, double-click the fields you want, in the order you want them to appear
Place a field on a new line	Press Return at the end of the previous line
Display a punctuation mark (like a comma) between field values	For Layout contents, set the insertion point before or after the << or >> characters around a field name, and then click a punctuation button

To	Do this
Display a space between field values	For Layout contents, click between field names where you want a space, and then press the Space bar
Remove a field name from the layout contents	For Layout contents, select the field name and << and >> characters, and then press Delete
Remove all field names and characters from the layout contents	Click Clear All



6. In the layout, adjust or delete the header, if necessary.

See “Resizing parts” on page 3-36 and “Deleting layout parts” on page 3-36.

If you’re using	Do this
A laser or ink jet printer	Set the header to the top of the first row of labels. The layout header compensates for the nonprintable area If the labels are small, try setting the header to the top of the second row of labels. FileMaker Pro won’t print on the first row of labels, but it prints in the correct position on subsequent labels
A dot matrix printer	Delete the header, if there is one. Click the part label, and then press Delete

7. Adjust the margins, if necessary.

See “Setting margins for labels” on page 3-16.

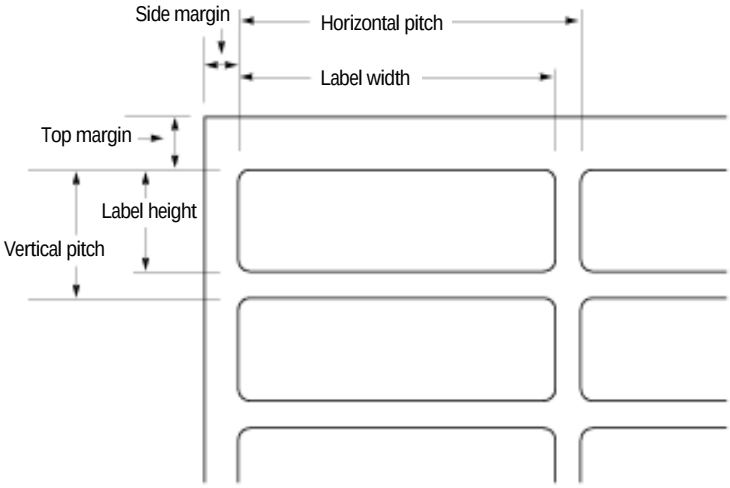
8. To enhance or modify the layout, see the appropriate sections later in this chapter.

Note Depending on the labels you choose, the layout may contain a blank header. If the first label starts at the top edge of the paper, set the header height to the height of the label so that printing starts on the second row of labels on the page.Creating custom labels

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ labels layout

If you don't see the size of your labels in the pop-up menu in the Label Setup dialog box, try to match your label dimensions with a preset type. To do this, add the space between labels to the label width and height to determine the horizontal and vertical *pitch* (the width of the left edge of a label to the left edge of the next, and the length of the top of one label to the top of the next).



? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ labels layout

Setting margins for labels

You can set margins that reflect the width of labels you're printing on. If you set a top margin, you don't also need a header on your layout.

1. In Layout mode, choose Layout Setup from the Mode menu.

2. In the Layout Setup dialog box, select Fixed page margins, and then type values for each margin.
3. Click OK.

   Turn page margins on to see how your page will print. For more information about setting margins and printing, see " Setting margins" on page 6-3.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ printing, labels

Printing labels

Before printing on label stock, practice printing on regular paper. If you're having trouble with alignment, try adjusting the header size, margins, or paper size.

You can also try the following tips for specific printer problems.

For this printer	Select
Laser or ink jet printer	Larger Print Area after clicking Options in the Page Setup dialog box. See " Printing" on page 6-12.
Dot matrix printer	Enable Print Spooling in the Print dialog box to minimize the rollback of the platen

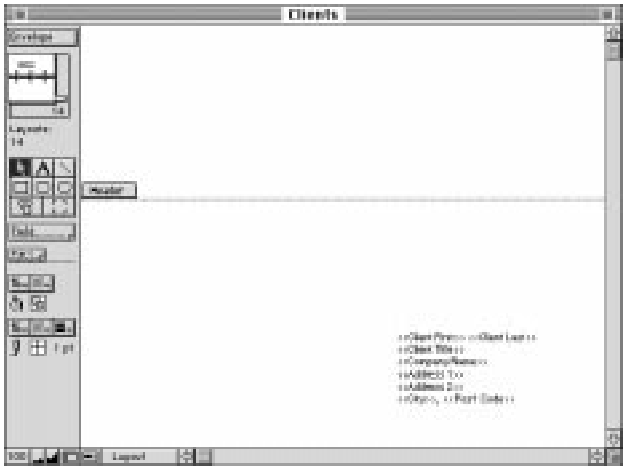
For more information about printing, see "Previewing before printing" on page 6-11 and " Printing" on page 6-12.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ printing, labels

Using Envelope layouts

The Envelope layout arranges fields for printing on standard business envelopes. It includes a header.



Important Use an Envelope layout only to arrange and print data in a format suitable for envelopes. You can't add data to a database file using an Envelope layout. To add data, use a different layout type.

Setting up to print on envelopes

Before you create an envelope layout, do the following:

- Choose the printer (see " Setting up to print on labels" on page 3-12).
- In the Page Setup dialog box, select US Letter (for U.S., or A4 for elsewhere). Don't choose an Envelope paper size.
- If you feed the envelopes into the printer short-side first, choose a landscape (horizontal) paper orientation. If you feed the envelopes into the printer long-side first, choose a portrait (vertical) orientation.

Creating an Envelope layout

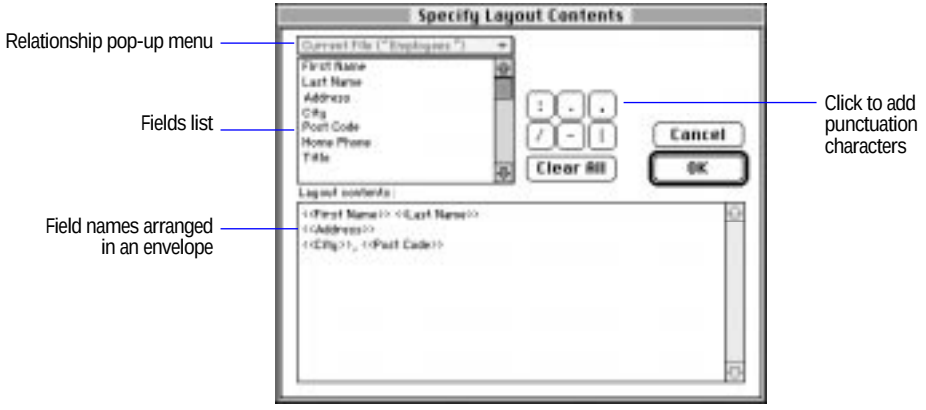
1. In Layout mode, choose New Layout from the Mode menu.
2. In the New Layout dialog box, for Type, select Envelope.

3. Select other options, and then click OK.

To	Do this
Give the layout a different name	For Layout Name, type a name
Include or exclude the layout in the layout pop-up menu	To include the layout, select Include in layouts menu. To exclude the layout, deselect this option. (For example, you might exclude layouts when you want to give users access only to a particular layout)

4. In the Specify Layout Contents dialog box, select and arrange fields for the envelopes, and then click OK.

To	Do this
Select fields for the envelopes	In the fields list, double-click the fields you want, in the order you want them to appear
Place a field on a new line	Press Return at the end of the previous line
Display a character (like a comma) between field values	For Layout contents, set the insertion point before or after the << or >> characters around a field name, and then click a character button
Display a space between field values	For Layout contents, click between field names where you want a space, and then press the Space bar
Remove a field name from the layout contents	For Layout contents, select the field name and << and >> characters, and then press Delete
Remove all field names and characters from the layout contents	Click Clear All



5. To enhance or modify the layout, see the appropriate sections later in this chapteDepending on the printer you use, you might not need the header.

If you	Do this
Manually feed envelopes into a center-feed printer	Keep the header and adjust it, as necessary, to match the printing to the envelope size
Manually feed envelopes into a right edge-feed printer	Keep the header and adjust it, as necessary, to match the printing to the envelope size. (A good rule of thumb for the header size is to subtract the envelope height from 8.5 inches)
Manually feed envelopes into a left edge-feed printer	Delete the header, and insert a footer. Adjust the footer, as necessary, to match the printing to the envelope size
Use a laser or ink jet printer that automatically feeds envelopes	Choose Page Setup from the File menu, and then select No. 10 Envelope paper size. Customize the Envelope layout, and then delete the header

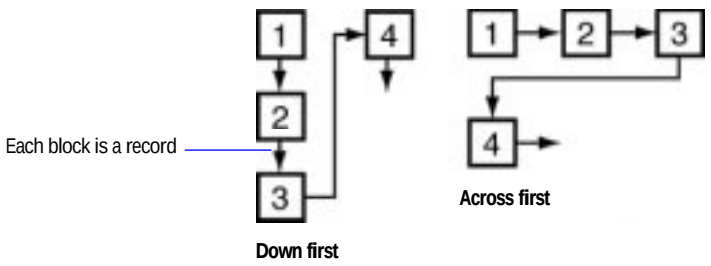
? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ envelope layout

Arranging records in columns

Instead of using a Columnar report or Extended columnar layout, you can set columns for a layout. For example, print phone directories with the records in several columns. Print records:

- down the page (column by column), for reports like directories, where you read from top to bottom, column by column
- across the page (row by row), for reports like mailing labels, to use the fewest number of rows and conserve label stock

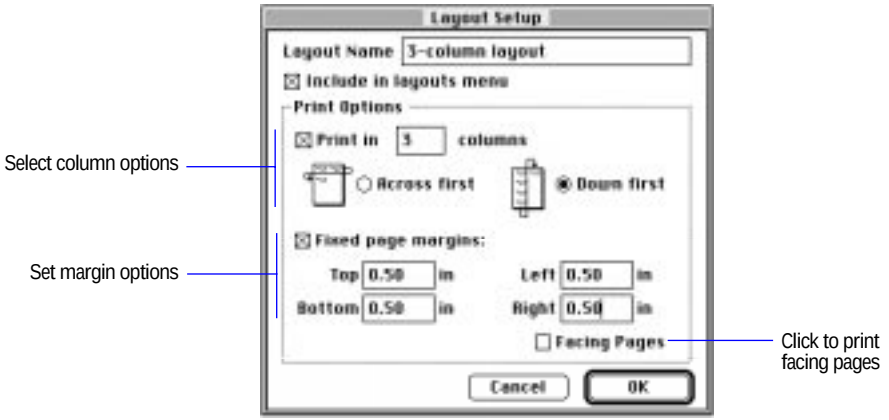


It's easiest to start with a Blank layout or a layout with no objects in the body. Before you set up columns, choose the printer to use and set the page setup options you want.

To set columns in a layout:

1. In Layout mode, choose the layout name from the layout pop-up menu.
2. Choose Layout Setup from the Mode menu.
3. In the Layout Setup dialog box, click Print in *<value>* columns.
4. Select options, and then click OK.

To	Do this
Set the number of columns	For Print in *<value>* columns, type a number from 1 to 99
Arrange records row by row (left to right and top to bottom)	Select Across first
Arrange records column by column (top to bottom and left to right)	Select Down first
Include or exclude the layout in the layout pop-up menu	To include the layout, select Include in layouts menu. To exclude the layout, deselect this option
Set margins	Select Fixed margins and type values for Top, Bottom, Left, and Right
Print facing pages	Select Facing pages



Keep these points in mind:

- You only see columns when you preview or print data; you don't see columns in Browse mode.
- In the sample (leftmost) column in the layout, make adjustments to keep the fields within the column, and arrange the information that prints for each record.

To	Do this
See data in fields that extend beyond the first column into the gray area of the second column	Select the fields to slide, choose Sliding/Printing from the Format menu, and then select options. See "Sliding objects and parts" on page 6-7.
Adjust the size of all the columns at once	Drag the vertical dashed line immediately to the left of the gray area to change the column width
To see how wide the column is	Choose Size from the Show menu. Position the pointer over the vertical dashed line and hold down the mouse button (be careful not to change the column width). You see the column width in the Size palette
See how the records will print in columns	Choose Preview from the Mode menu

- When you print records in columns down the page, FileMaker Pro prints subsummary parts the width of the *column*. If the subsummary part controls a page break, FileMaker Pro starts a new column (not a new page). When you print records in columns across the page, FileMaker Pro prints subsummary parts across the width of the *page*, and then starts a new page if the part controls a page break. (See "About summary layout parts" on page 3-29.)

- To change the placement of records (across first or down first) and the number of columns, choose the layout from the layout pop-up menu, and then choose Layout Setup from the Mode menu. Change the options, and then click OK. (To remove the column setup, deselect Print in columns.)

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- records, in columns

Managing layouts

In Layout mode, you can change layouts without changing the information in the associated database file.

To	Do this
Switch layouts	Choose a different layout from the layout pop-up menu
Duplicate a layout, to design a new one	From the layout pop-up menu, choose the layout to duplicate, and then choose Duplicate Layout from the Mode menu. A duplicate of the layout appears last in the layout pop-up menu, with Copy appended to the name. (Depending on the layout, you may want to duplicate it before making changes.)
Delete a layout	From the layout pop-up menu, choose the layout to delete. Choose Delete Layout from the Mode menu, and then click Delete in the alert message. A database must have at least one layout at any time, so you can delete all layouts except the last remaining one. You can't undo deleting a layout.
Rename a layout	From the layout pop-up menu, choose the layout to rename, and then choose Layout Setup from the Mode menu. For Name, type a new name, and then click OK.
Reorder layouts in the layout pop-up menu	Choose Set Layout Order from the Mode menu. Drag the layout name to the position you want, and then click OK. In a multiuser database, only the host can reorder layouts, and only when the database isn't being shared.
Include or exclude the layout in the layout pop-up menu	Choose Set Layout Order from the Mode menu, and then choose a layout. To include the layout, select Include in layouts menu. To exclude the layout, deselect this option. You see a checkmark next to the name of a layout that's included in the layout pop-up menu.

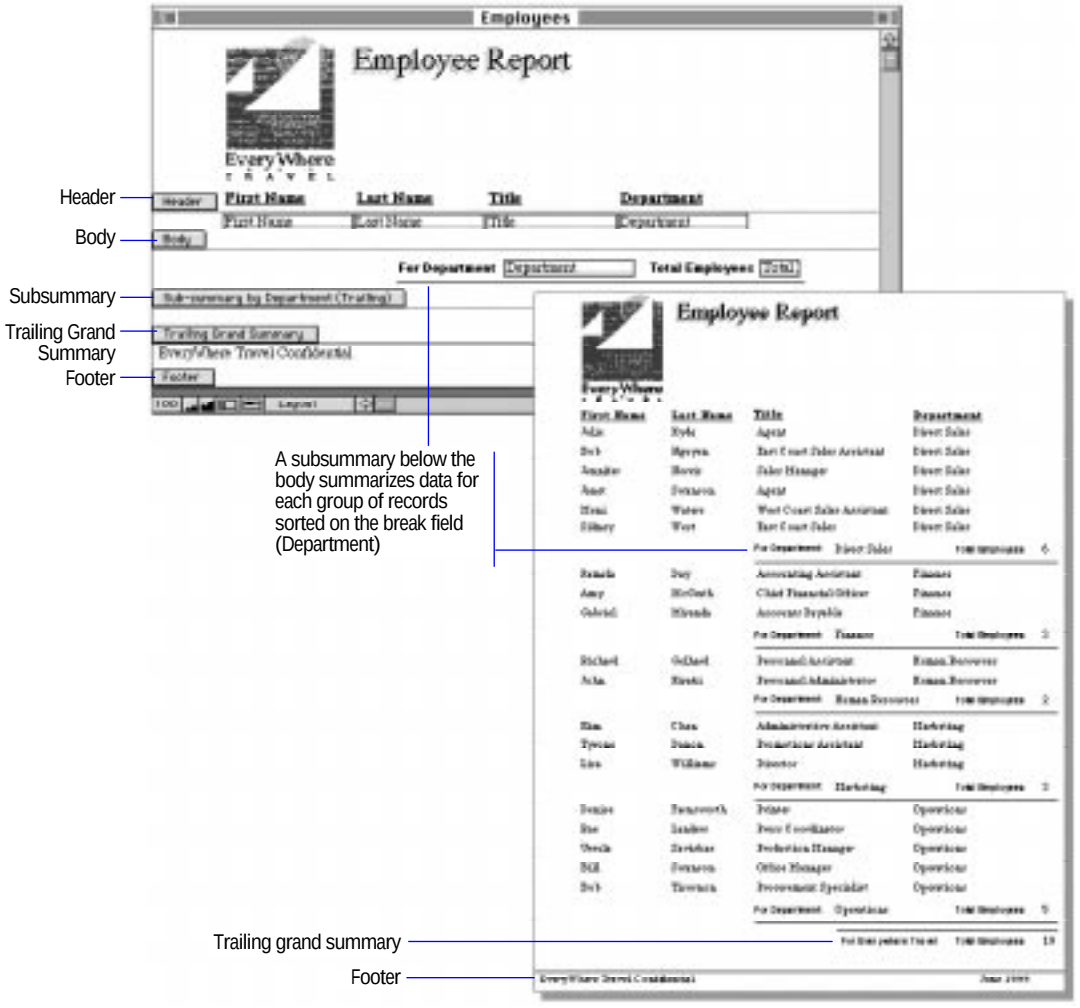
? Choose FileMaker Help Index from the ? or Help menu, and then type:

- layouts, managing
- layout pop-up menu

Working with layout parts

FileMaker Pro layouts are divided into *parts*, which are areas in a layout that tell FileMaker Pro how to display and print data and text within each part. For example, by using parts, you can tell FileMaker Pro to print data:

- once for each record
- only at the top of each page
- only before or after groups of sorted records
- only once on the first page of a report

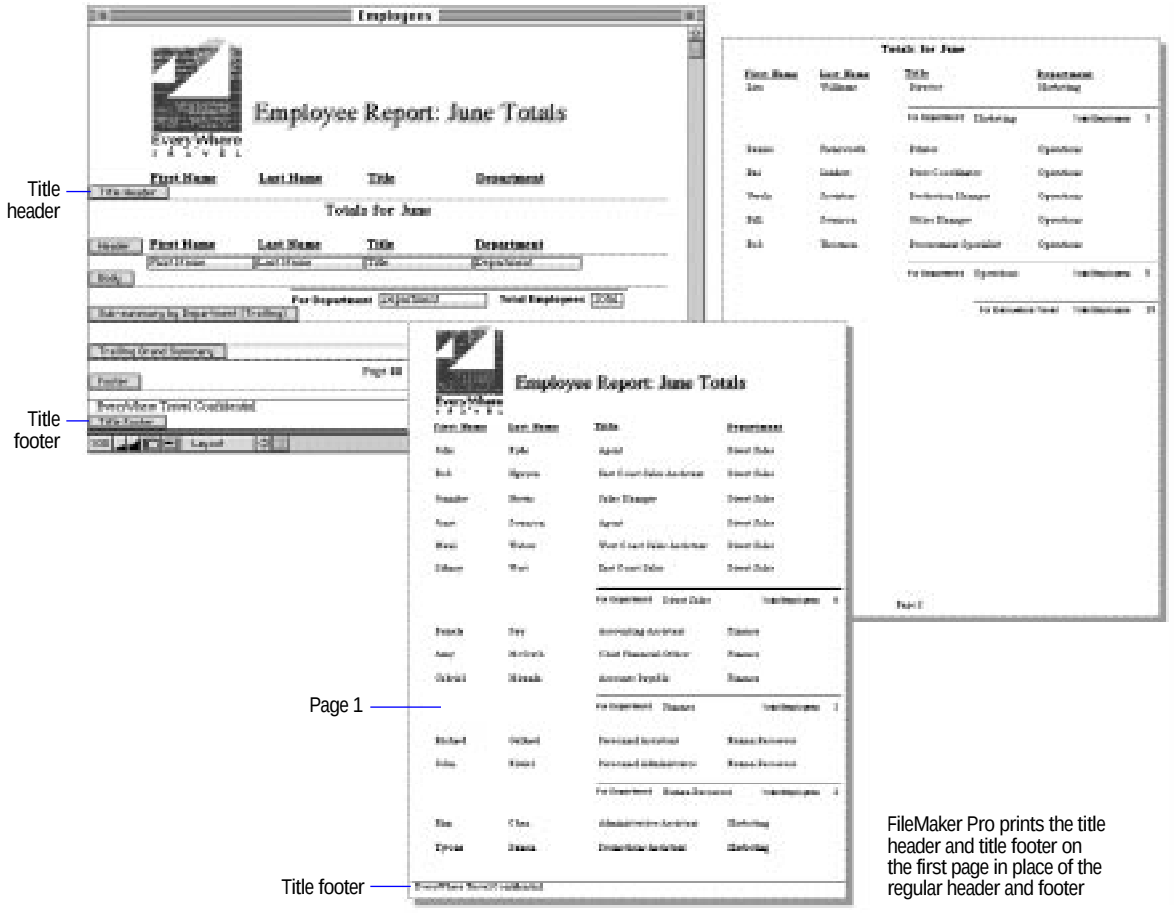


Each layout must have at least one part. Choose from eight different layout parts, as described in the following table.

Layout part	Description
Header	Use for column headings, titles, graphics, and other information that will appear only at the top of every page. For example, include a header for a directory. FileMaker Pro displays the header in Browse mode and prints it on every page, except the first page if you add a title header. Fields added to a header are printed on every page, using data from the first record on that page. You can delete the header from any layout
Body	Put everything you want to appear in each record, including fields, text, lines, and graphics, in the body. The contents of the body are printed for each record in the current found set. When you print records, FileMaker Pro prints the body for as many records as can fit on the page with the other parts. You can change the size of the body to change the amount of space used for each record. The body is the only part used with FileMaker Pro Web Companion Instant Web Publishing
Subsummary	Prints a summary of information for each group of records sorted on the break field. You can add one or more subsummaries above or below the body. See “About summary layout parts” on page 3-29.
Leading grand summary	Use to summarize all records being browsed above the data in individual records. You can use only one leading grand summary. See “About summary layout parts” on page 3-29.
Trailing grand summary	Use to summarize all records being browsed below the data in individual records. You can use only one trailing grand summary. See “About summary layout parts” on page 3-29.
Footer	Use for page numbers, dates, graphics, or any other information you want to appear only at the bottom of every page. FileMaker Pro displays the footer in Browse mode and prints it on every page, except the first page if you add a title footer. Fields added to a footer are printed on every page, using data from the last record on that page. You can delete the footer from any layout
Title header	Use for printed reports. The title header replaces the regular header on the first page only. For example, put a report title in the title header. Use the regular header on the other pages of the report for information like a chapter name
Title footer	Use for printed reports. The title footer replaces the regular footer on the first page only. For example, put the author and date in the title footer. Use the regular footer on the other pages of the report for information like page numbers

Every predefined layout type includes the body part. Most layouts, including the Standard layout, also have a header part and footer part. A layout can have only one header, body, and footer.

You can put fields, graphic objects, and text in any layout part. For example, put your company logo as a graphic object in the header and place a horizontal dividing line at the bottom of the body.



FileMaker Pro prints the title header and title footer on the first page in place of the regular header and footer

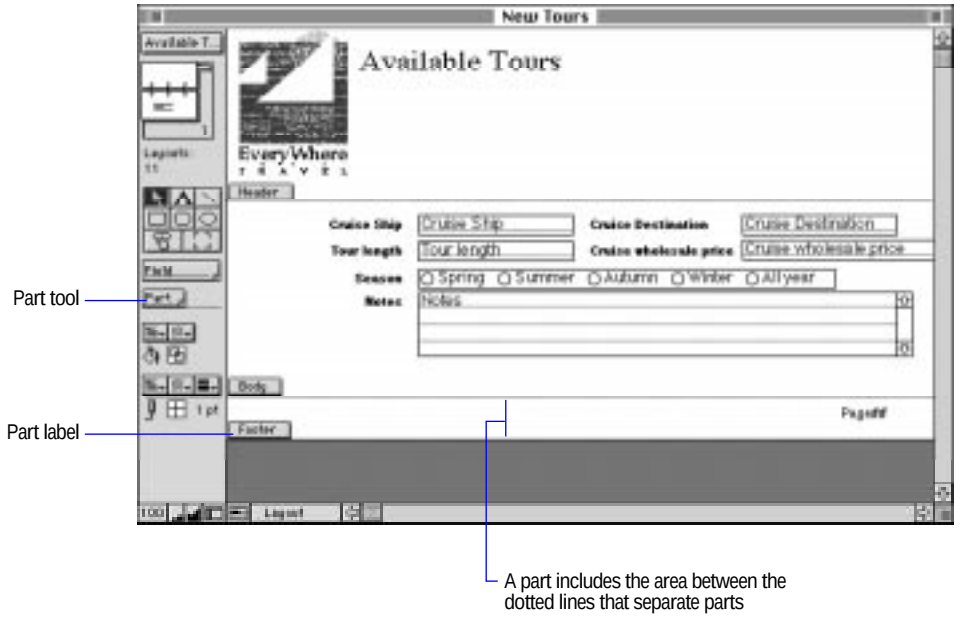
Adding layout parts

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- layout parts, using

You can add a new part to a layout or replace one you deleted. First add the part, and then specify the kind of information to appear in it.

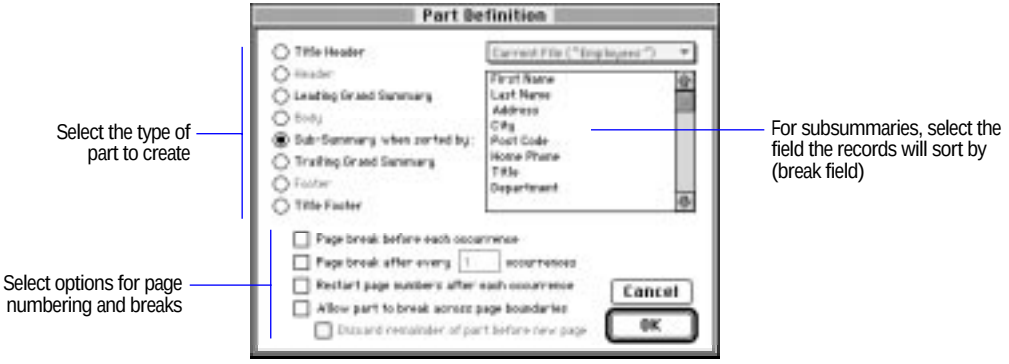
A dotted line defines the bottom of a layout part, and the part label to the left of the line identifies the part.



To add a layout part:

1. In Layout mode, choose Part Setup from the Mode menu.
2. In the Part Setup dialog box, click Create.

3. In the Part Definition dialog box, select options.



4. Click OK, and then click Done.

Keep these points in mind:

- To set options for parts and to add subsummary and grand summary parts to layouts, see “Changing part types and options” on page 3-36 and “ Adding a summary part” on page 3-30.
- To resize layout parts, change what they contain, or remove all but one of them, see “Changing layout parts” on page 3-34.

- To print a cover page for a report, make the title header large enough to cover a page. You can then add a regular header, a regular footer, and any other layout parts you want to appear on subsequent pages.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ layout parts, defining

Adding objects to a layout part

You can add fields of any type, graphic objects (like lines, rectangles, ovals, and pictures), and text in all layout parts. (To add objects to a part, see “Working with all object types” on page 3-37.)

Important FileMaker Pro considers an object to be in a part when the top of the object is in or just touching the part. For example, to print a box only when the header prints, put at least the top of the box in the header. Or if the top of a field touches the bottom of a header, the field becomes part of the header, and its contents won’t print or display after the first record.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ objects, creating

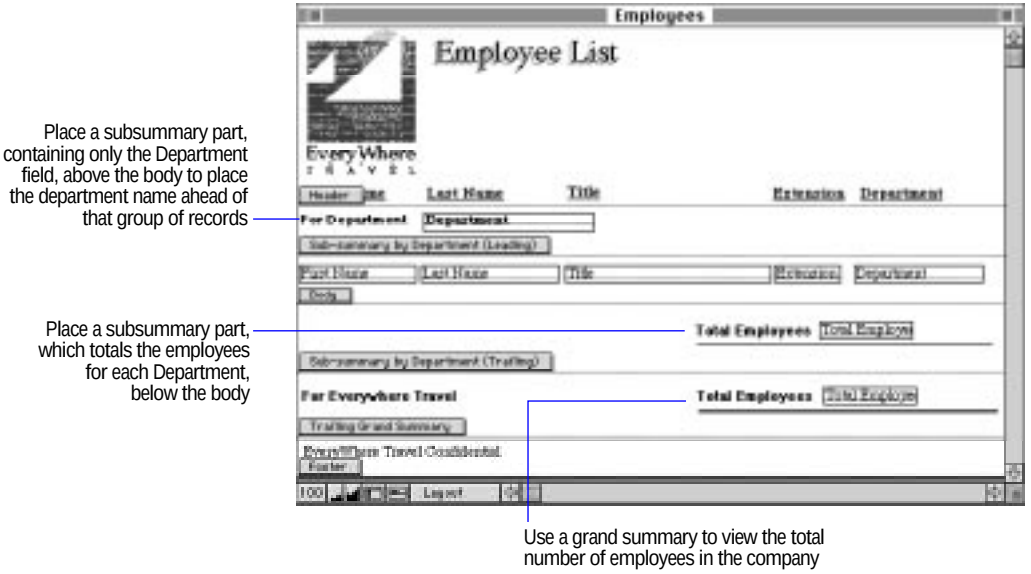
About summary layout parts

Use summary parts to view and display information from one or more records. You place a summary field in a summary part to perform the summary. (To define summary fields, see “Defining summary fields” on page 2-24.)

Summary part	Description
Leading grand summary	At the beginning of a report, summarizes all the values in a summary field for all records being browsed. You can have only one leading grand summary in each layout. If you put nonsummary fields in a leading grand summary, FileMaker Pro prints the data in that field for the first record being browsed
Leading subsummary	Before the body of a report, summarizes the values in a summary field for a group of records. You sort the records according to the break field for that part to create groups that have the same value for that field. If you put nonsummary fields in a leading subsummary, FileMaker Pro prints the data in that field for the first record of the group being summarized

Summary part	Description
Trailing subsummary	Same as leading subsummary, except it displays the subsummary after the body of the report and prints the data for the last record of the group being summarized for any nonsummary fields in the part
Trailing grand summary	Same as leading grand summary, except it displays the grand summary at the end of a report and prints or displays the data for the last record being browsed in any nonsummary fields in the part. You can have only one trailing grand summary in each layout

You can start a new page for any subsummary part. See "Paginating a layout" on page 3-32.


Place a subsummary part, containing only the Department field, above the body to place the department name ahead of that group of records
Place a subsummary part, which totals the employees for each Department, below the body
Employees
Employee List
Total Employees
Total Employees
Use a grand summary to view the total number of employees in the company

Adding a summary part

Choose FileMaker Help Index from the ? or Help menu, and then type:

- parts, layout

1. Add a summary part.

   See "Adding layout parts" on page 3-27.

2. In the Part Definition dialog box, select a summary type.

   If you click Sub-summary when sorted by, also select the field to sort by (the break field). To define a summary field, see "Defining summary fields" on page 2-24.

3. Select page numbering and page break options, click OK, and then click Done.

   For information on the options, see "Paginating a layout" on page 3-32.

4. In the layout, drag the summary field into the summary part.

   See "Adding fields to a layout" on page 3-56.

5. If you added a subsummary part, sort the records according to the break field (specified when you created the part).

   See "Sorting records" on page 4-31.

Keep these points in mind:

- The break field groups the records. Each time a group starts or finishes printing, the leading or trailing subsummary is displayed.
- When you view records as a list in Browse mode, subsummary parts aren't displayed. To see subsummary parts in a View as List layout, print the file, or switch to Preview mode.
- If you add a summary part to a layout that doesn't include a body part, FileMaker Pro lets you specify whether you want the summary above or below any body part you might add later on.
- To see summaries for groups of sorted records, move the summary fields into a subsummary part. To see summaries that total all records in the found set, move the summary fields into a Leading grand summary or Trailing grand summary part.

- FileMaker Pro previews and prints correct subsummary values only after you sort the records. Sorting groups the records by the value in the specified field (break field), so the subsummary totals all records with the same value in that field. You can sort by more than one field to add another level of grouping to your data.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ layout parts, defining

Paginating a layout

You can set and change page break and numbering options for layout parts in the Part Definition dialog box.

1. Add a layout part, or select a part in the Part Setup dialog box and click Change.

   See “Adding layout parts” on page 3-27.

2. In the Part Definition dialog box, select an option.

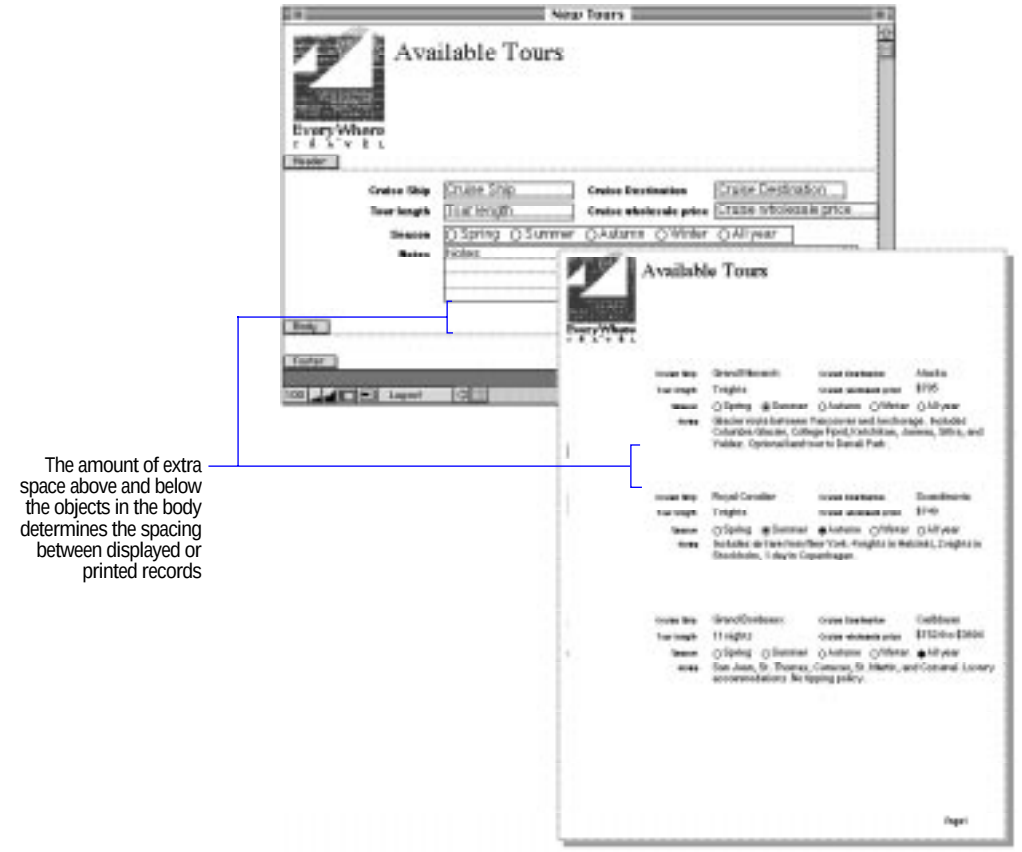
To	Select	With these layout parts
Start a new page before printing the contents of the part (for example, print a trailing grand summary on a new page)	Page break before each occurrence	Subsummary when sorted by Body Trailing subsummary Trailing grand summary
Start a new page after printing the contents of the specified occurrences of the part (for example, print five records in the body, and then start a new page)	Page break after every *<value>* occurrences	Leading grand summary Subsummary when sorted by Body Trailing grand summary
Start page numbering from the beginning after printing the part (for example, start page numbering after the title header if you want it to serve as a cover page)	Restart page numbers after each occurrence	Title header Header Leading grand summary Subsummary when sorted by Body Footer
Print the entire contents of the part even if it doesn't fit on one page (for example, divide and print the body across two pages when it doesn't fit on a single page with the other parts)	Allow part to break across page boundaries	Leading grand summary Subsummary when sorted by Body Trailing grand summary
Print as much of the contents of a part as fits on the page but to not finish printing it on the next page (for example, print the information in a Notes field to the bottom of the page and truncate the rest)	Discard remainder of part before new page (available only if you select Allow part to break across page boundaries)	Leading grand summary Subsummary when sorted by Body Trailing grand summary

3. Click OK, and then click Done.

Keep these points in mind:

- If you set column options to print records *down* the page and specify a page break for a subsummary part, FileMaker Pro starts a new column, and not a new page, when you preview or print records. If you print records in columns *across* the page, FileMaker Pro starts a new page if the subsummary part includes a page break.
- If the body or a summary part is too large to fit on a page between the header and the footer, you see a dashed line on the layout to show where the part will be divided. (This can change if you set sliding options. See "Sliding objects and parts" on page 6-7.)

- If the whole body of another record won't fit at the bottom of a page, FileMaker Pro prints it on the next page, unless you set the option to break parts across pages or the body can't fit on a single page.


Available Tours
Available Tours
The amount of extra space above and below the objects in the body determines the spacing between displayed or printed records

Changing layout parts

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ page numbering

Change layout parts as described in the following sections.

Reordering parts

You can change the order of the body and subsummary parts only. For example, move a subsummary above the body to see subtotals first. FileMaker Pro moves all the objects in the reordered part and maintains its proportions.

1. In Layout mode, choose Part Setup from the Mode menu.
2. Use the double-arrow pointer to drag the part to the new position.
3. Click Done.

Keep these points in mind:

Part label control (at bottom of window)

- In Layout mode, you can click the part label control at the bottom of the screen to move the part labels to a vertical position (for more room on the layout). To read vertically displayed part labels more easily, temporarily flip down the labels by holding down the mouse button when the pointer is over the label.
- You can have only one leading and one trailing subsummary part based on the same field. You can't move a subsummary based on a field to where another subsummary based on that same field exists.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ layout parts, managing

Resizing parts

When you resize a layout part, FileMaker Pro always maintains the size of the other parts. For example, changing the size of the header won't change the size of the body.

In Layout mode, use the pointer to drag the part label (or the dotted line below the part) until the part is the size you want.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- layout parts, managing

Changing part types and options

You can change a layout part's type and options, including the break field, numbering, and page break settings in the Part Definition dialog box.

To display the Part Definition dialog box, double-click the part label in the layout or see “Adding layout parts” on page 3-27.

To change	Do this
Part types	Select a different part type. Changes you can make depend on the part’s location and function
Break field	In the fields list, select a different field name. (Change the break field to change the focus of a report using different fields in subsummary parts)
Page breaks and numbering	See “Paginating a layout” on page 3-32.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- layout parts, managing

Deleting layout parts

You can delete all but the last part that remains on a layout. Deleting a part doesn’t affect your data. Before you delete a layout part, you can drag any objects you want to keep to another part on the same layout.

1. In Layout mode, choose Part Setup from the Mode menu.
2. In the Part Setup dialog box, select the part to delete, and then click Delete.

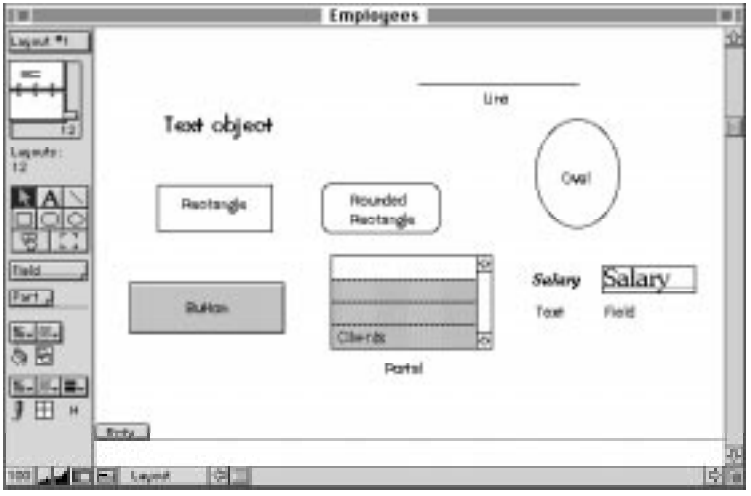
3. If the part contains objects, click Delete in the alert message.
4. Click Done.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- layout parts, managing

Working with all object types

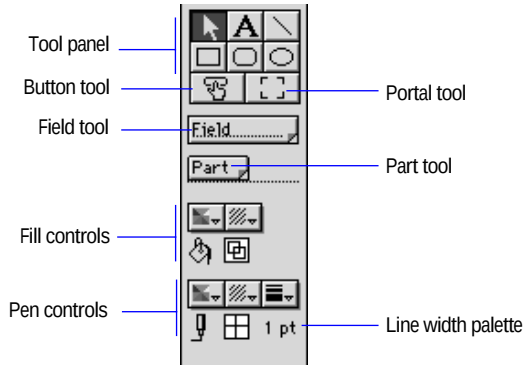
An *object* is a separate element—text, a field, or a graphic object (such as an oval or an imported picture)—that you can draw, select, move, resize, delete, copy, and otherwise change. You place objects in a layout to design how the layout looks and works. For example, add the title Invoice, or emphasize a group of fields by enclosing them in a shaded or colored rectangle.



Note Another type of object is a *portal*, which displays related records. For more information, see “Creating a portal to hold related fields” on page 10-23.

Working with the drawing tools

For each type of object you work with, you use the various tools in the status area of the Layout window.



Status area control (at the bottom of the window)

No tools visible? Choose Layout from the Mode menu, and then click the status area control at the bottom of the screen.

Use the following techniques to work with the tools:

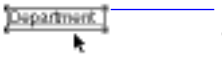
To	Do this
Use a tool once	Click a tool to select it. (The tool becomes gray)
Keep a tool selected	Double-click a tool. (The tool becomes black to indicate it remains selected until you select a different tool.) To set an option to keep layout tools selected, see “Setting layout preferences” on page 9-3.
Switch between the tool last used and the pointer	Press Enter

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- tool panel

Selecting objects

Whenever you want to work with an object, you must select it first. You see *handles*, small black squares along the boundaries of a selected object.



Pointer tool

To select an object, use the pointer tool or choose Select All from the Edit menu.

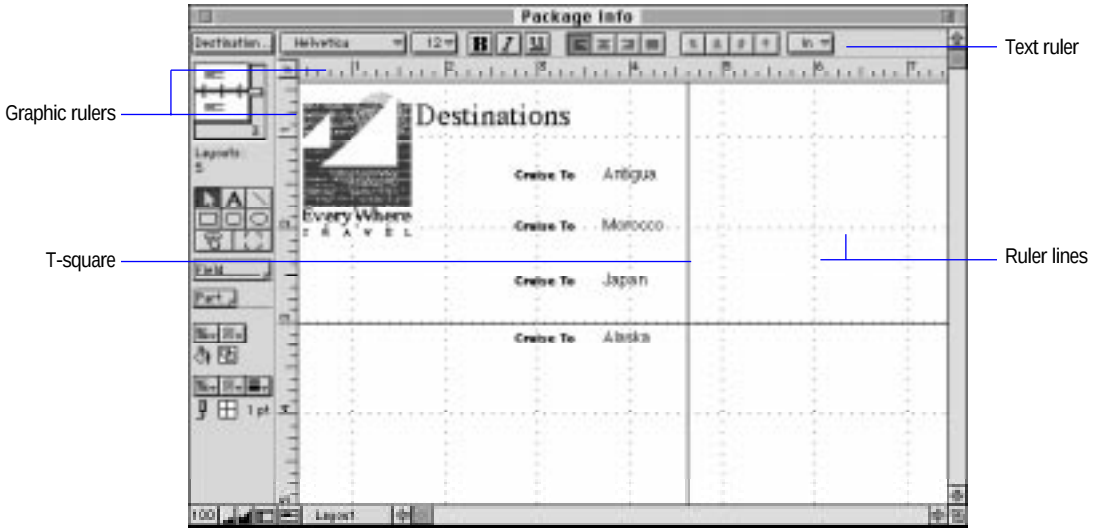
To select	Do this
One object	With the arrow pointer, click the object. (If the object has no fill, click its border)
Several objects at once	Drag the arrow pointer to make a selection box that completely surrounds the objects. Or hold down Shift and click the objects. Or choose Select All from the Edit menu
All objects of the same type	Click the tool for the type of object to select, and then choose Select All from the Edit menu
All fields	With the arrow pointer, click a field, hold down Option, and then choose Select All from the Edit menu
Deselect selected objects	Click a blank area of the layout or any tool in the tool panel. Or hold down Shift and click the selected object

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- objects, changing
- objects, selecting

Positioning and sizing objects

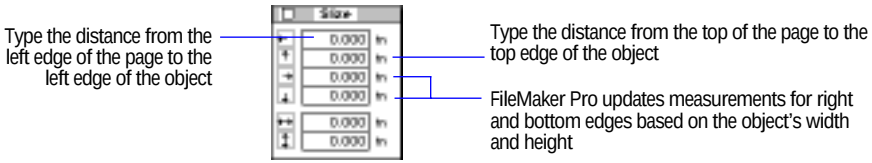
Use the text ruler, graphic rulers, ruler lines, T-square, AutoGrid, and Size palette to size, position, and align objects.



Guide	Description
Text ruler	A horizontal ruler to help align and format text.
Graphic rulers	Horizontal and vertical rulers to help measure and position objects.
Ruler lines	A network of intersecting horizontal and vertical lines that correspond to the current ruler settings, to help measure and position objects. (Ruler lines are different from the AutoGrid.)
T-square	Intersecting horizontal and vertical lines to help align objects that are far from each other in the layout. You can move the T-square to the objects to position. The ends of the T-square extend into the rulers, so you can position an object precisely.
AutoGrid	An invisible, snap-to grid. When the AutoGrid is turned on, newly added objects are aligned to the nearest grid coordinate. Objects being moved or resized are moved or resized in grid increments.
Size palette	Type size and distance measurements in the Size palette to position objects precisely. Or verify an object's position using the Size palette.

The following information tells you how to use each guide.

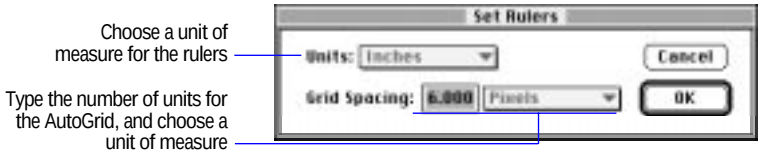
- To show or hide the rulers, ruler lines, or T-square, choose Text Ruler, Graphic Rulers, Ruler Lines, or T-squares from the Show menu. For information about the text ruler, see “Formatting text paragraphs” on page 3-84.
- To switch the Auto Grid on or off, choose Auto Grid from the Arrange menu. To temporarily disable the AutoGrid, hold down Command while dragging an object.
- To adjust the T-square, place the pointer on the horizontal or vertical line. When the pointer is a double arrow, drag the line. (To see the position of the T-square in the Size palette, choose Size from the Show menu, position the pointer over the T-square, and then hold down the mouse button.)
- To position an object using the Size palette, select the object, and then choose Size from the Show menu. Type the measurements for the position you want, and then press Return or Enter. (The unit of measure is that set for the graphic rulers.) You can close the palette or leave it open.


Type the distance from the left edge of the page to the left edge of the object
Size
0.000 in
0.000 in
0.000 in
0.000 in
0.000 in
0.000 in
Type the distance from the top of the page to the top edge of the object
FileMaker Pro updates measurements for right and bottom edges based on the object’s width and height

- To position an object precisely by dragging it, choose Size from the Show menu. Drag the object until you see the position you want in the Size palette.
- To set the unit of measure—inches, centimeters, or *pixels* (dots that make up the graphic on a computer screen)—for rulers and ruler lines, click the box where the graphic rulers intersect. When the Size palette is open, click the units label.

On this ruler	Each increment measures
Inch (in)	1/8 inch
Centimeter (cm)	.25 centimeters
Pixel (px)	10 pixels

- To change the unit of measure for the graphic rulers and the AutoGrid, choose Set Rulers from the Mode menu. Make your selections and click OK. (You can choose different units of measure for the rulers and the AutoGrid. If you change units for the AutoGrid, you change the increments by which objects are snapped "to" the grid.)


Choose a unit of measure for the rulers
Type the number of units for the AutoGrid, and choose a unit of measure
Set Rulers
Units: Inches
Cancel
Grid Spacing: 6.000 Pixels
OK

Note To align objects to each other, see "Aligning objects to each other" on page 3-48.

Choose FileMaker Help Index from the ? or Help menu, and then type:

- objects, positioning
- text ruler

Editing objects and data quickly using the context menu

You can quickly edit an object or data by choosing editing commands directly from the *context* menu. You can display the context menu for all objects in Layout mode and for fields and selected text in Browse mode.

In Layout mode, hold down Control, and then click and hold down the mouse button while the pointer is on an object to edit. In Browse mode, hold down Control, and then click and hold down the mouse button while the pointer is on a field or data to edit.

The commands in the context menu depend on the type of object selected. For example, when a text object is selected in Browse mode, you see text formatting commands like Font, Size, and Style. When the object is selected in Layout mode, you see additional commands like Specify Field and Field Borders.

Editing a text field in Layout mode

Editing a text field in Browse mode

Showing button, text, and field boundaries

FileMaker Pro displays boundaries only in Layout mode. Use boundaries only for positioning objects on the layout.

To show	Choose this from the Show menu
A 2-pixel gray border around buttons you've created	Buttons. To hide the borders, choose the command again.
Boundaries around text objects	Text Boundaries. To hide text boundaries, choose the command again.
Boundaries around fields	Field Boundaries. To hide field boundaries, choose the command again.

Note For more information on working with buttons, see "Using buttons with scripts" on page 5-20.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- showing

Arranging objects

The following sections explain how to arrange graphic objects, fields, and text on a layout.

For information on using the AutoGrid, rulers, T-square, and other alignment guides, see "Positioning and sizing objects" on page 3-40.

Moving objects

To move	Do this
One object	Select the object, and then drag it to the position you want. (To constrain the movements to horizontal or vertical directions, hold down Shift as you drag the object)
Several objects at once	Select the objects, and then drag them to the position you want. (To constrain the movements to horizontal or vertical directions, hold down Shift as you drag the objects)
An object to a different layout	Select the object, and then choose Cut from the Edit menu. Move to the other layout and choose Paste from the Edit menu. Then drag the object to the position you want You can use drag and drop to move objects to different layouts in other files. See "Using drag and drop to move information" on page 4-14.
An object to a different application or desk accessory	Select the object, and then choose Cut or Copy from the Edit menu. Open the other application or desk accessory, bring it to the front, and then choose Paste from the Edit menu

Keep these points in mind:

- You can quickly and easily move one or more objects to a different location in the current file or to a different file or application by using drag and drop. See "Using drag and drop to move information" on page 4-14.
- If you drag a handle by mistake and resize the object, choose Undo from the Edit menu before you do anything else in FileMaker Pro.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ objects, positioning

Cutting, copying, and pasting objects

To	Select the object, and then do this
Make one copy of (duplicate) an object	Choose Duplicate from the Edit menu (or hold down Option and drag the object). Then move the object to the position you want
Remove an object to paste it elsewhere	Choose Cut from the Edit menu. To paste the object elsewhere, click where you want to insert it, and then choose Paste from the Edit menu
Paste a copy of an object elsewhere	Choose Copy from the Edit menu. Click where you want to insert the object, and then choose Paste from the Edit menu
Paste a cut or copied object onto a different layout	Choose Cut or Copy from the Edit menu. Switch to the other layout, and then choose Paste from the Edit menu
Delete an object permanently	Choose Clear from the Edit menu (or press Delete). FileMaker Pro doesn't place your selection on the Clipboard, and you can't paste it anywhere

Keep these points in mind:

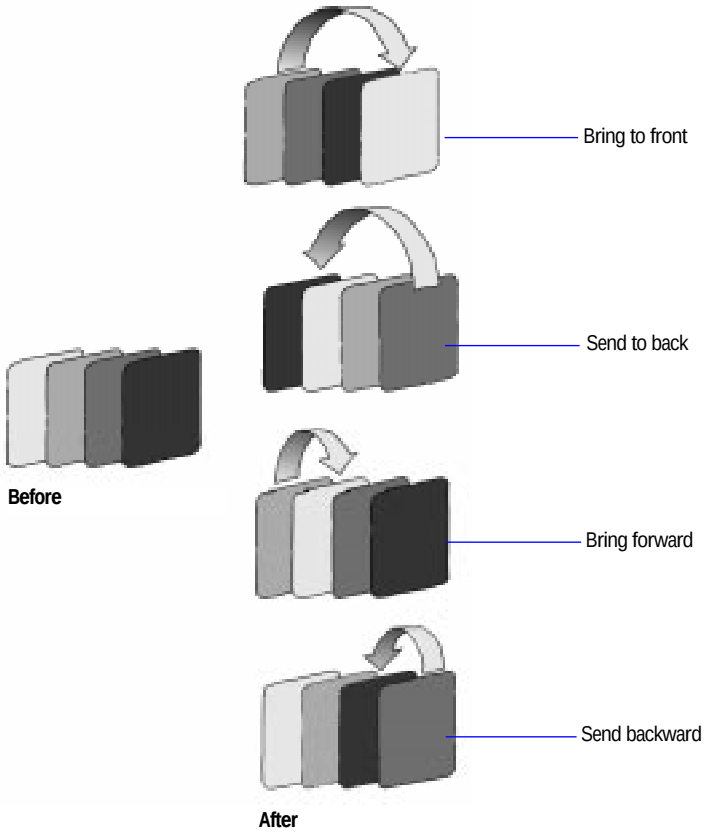
- To restore an object that you deleted, choose Undo from the Edit menu before you do anything else in FileMaker Pro.
- An object you cut or copied stays on the Clipboard until the next time you cut or copy objects or information (in FileMaker Pro or another application), or turn off your computer.
- To edit text in a text object, see "Working with text" on page 3-79.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ objects, changing

Stacking objects and changing the stacking order

You can create a design in which you *stack* objects by creating or dragging them on top of each other. Objects are preset to stack in the order you create them—the first object created is on the bottom, and the last one is on top. You can change the order in which objects are stacked.



1. In Layout mode, select the object to move in the stack.

2. Choose a command from the Arrange menu.

To move the object	Choose
To the top of the stack	Bring to Front
One layer forward	Bring Forward
Behind all other objects	Send to Back
One layer back	Send Backward

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- bring forward/to front
- send backward/to back

Grouping and ungrouping objects

You can combine several objects into one by grouping them. You can then work with the group the way you work with a single object. A group can include individual objects and other groups.

- To group objects, select the objects, and then choose Group from the Arrange menu.
- To ungroup grouped objects, select the group, and then choose Ungroup from the Arrange menu.

Keep these points in mind:

- When you ungroup a group that contains other groups, the subgroups stay grouped until you ungroup them.
- You can edit a text object that's part of a group without ungrouping it first.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

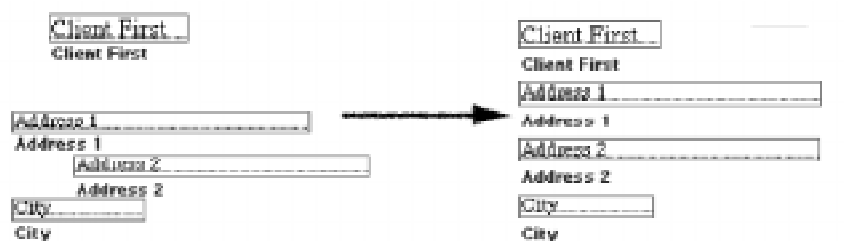
- grouping objects

Aligning objects to each other

You can align (line up) objects by their tops, bottoms, or sides. For example, align a field label with its field so that the label is centered between the field's top and bottom border.

When you align a group of objects, they align with the object farthest in the chosen direction. When you align center points, the objects align along an invisible vertical or horizontal line in the center of the objects.

You can also distribute the space evenly between objects by dividing the space that separates the two outermost objects between all selected objects.



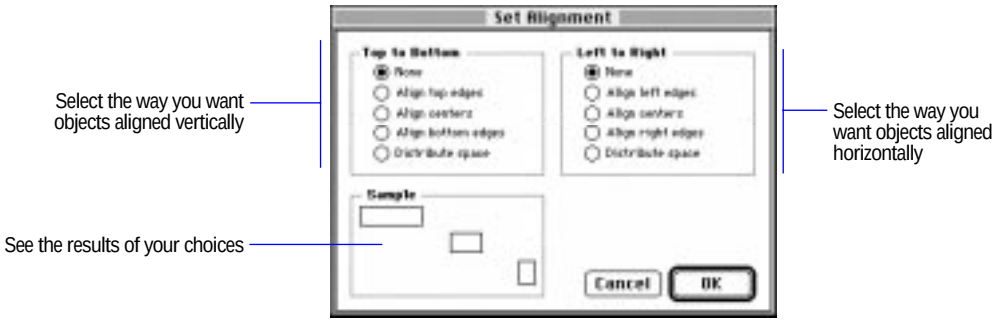
Objects before distributing space

Objects after distributing space vertically and aligning left sides

1. In Layout mode, select the objects to align, and then choose Set Alignment from the Arrange menu.
2. In the Alignment dialog box, select the alignment or distribution, and then click OK.

To	Do this
Set the vertical alignment or even distribution of space	For Top to Bottom, select one option.
Set the horizontal alignment or even distribution of space	For Left to Right, select one option.

You can select from both columns.



Keep these points in mind:

- To align new objects according to the current settings, select the objects to align, and then choose Align from the Arrange menu. (If the settings are both None, the command is unavailable.)
- To align two objects without moving one of them, select one object, and then choose Lock from the Arrange menu. Next, select both objects, and then choose Align from the Arrange menu. (For information on locking objects, see “Protecting objects from change” on page 3-52.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ aligning objects

Rotating objects

You can rotate fields, text objects, and graphic objects in 90 degree increments.

- To rotate a field, text object, or graphic object, select the object, and then choose Rotate from the Arrange menu.
- Continue selecting Rotate from the Arrange menu until the object is rotated as you wish.

Keep these points in mind:

- For easy editing, a rotated field temporarily reverts to 0 degrees rotation when it is selected in Browse mode. The field assumes its previous rotation when it is deselected.
- Portals cannot be rotated.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

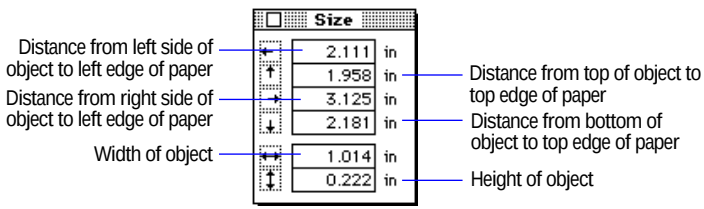
▸ rotating objects

Changing the appearance of objects

You can change the appearance of a field or a text or graphic object, for example by changing its size, border width, or fill pattern.

Resizing objects

To resize	Do this
An object, using the handles	Select the object and drag a handle until the object is the size you want. To limit the change to only vertical or horizontal, hold down Shift as you drag a handle. (Do this to make fields longer without changing their height)
An object, using the Size palette	Choose Size from the Show menu. Select the object to resize. Type the width and height in the lower two boxes, and then press Return
A circle or square	Select the object. Hold down Option and drag a handle until the object is the size you want
Several objects at once	Select the objects and drag a handle of one object until all objects are resized


Size
2.111 in
1.958 in
3.125 in
2.181 in
1.014 in
0.222 in
Distance from left side of object to left edge of paper
Distance from right side of object to left edge of paper
Width of object
Distance from top of object to top edge of paper
Distance from bottom of object to top edge of paper
Height of object

Keep these points in mind:

- Resizing the first repetition of a repeating field resizes all repetitions.

- Resizing a grouped object resizes all the objects in the group. See “Grouping and ungrouping objects” on page 3-47.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ resize objects

Changing an object's shape

To	Do this
Reshape one object	Select the object, and then drag a handle until the object is the shape you want. (To change only the height or width, hold down Shift as you drag)
Reshape several objects at once	Select the objects, and then drag a handle of one object until the objects are reshaped
Change a rectangle into a square or an oval into a circle	Select the object. Hold down Option and drag a handle to the shape you want

Note If the AutoGrid is on, you reshape objects in increments defined by the grid settings. To reshape objects in finer increments, choose AutoGrid from the Arrange menu to turn the grid off. See “Positioning and sizing objects” on page 3-40.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ reshape objects

Changing lines, colors, and patterns

To set or change preset fill color or pattern, pen color or pattern, or line or border width, start with no objects selected. Then choose attributes from the palettes.

Keep these points in mind:

- To remove a fill pattern or pen pattern from an object, select the object, and then choose the transparent pattern.
- To use the attributes of an existing object to set the preset attributes, hold down Command and click the object.
- Attributes you set in the Field Borders dialog box for pattern, color, and width replace attributes set with the pen and width controls in the status area, and vice versa. See "Adding borders, fill, and baselines to fields" on page 3-73.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ graphic tools

Protecting objects from change

Lock objects so you can't move them, change their size, or remove them from the layout.

To lock objects, in Layout mode, select the objects, and then choose Lock from the Arrange menu. To unlock objects, select the objects, and then choose Unlock from the Arrange menu.

When you copy or duplicate a locked object, the copy isn't locked. When you group objects that include a locked object, the entire group is locked.

Note You can change the stacking order of locked objects. (See "Stacking objects and changing the stacking order" on page 3-46.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ locking objects

Working with graphic objects

Draw graphic objects—lines, rectangles, squares, rounded rectangles, ovals, and circles—anywhere on a layout. You can also import QuickTime movies (in Browse mode) and bring in graphics created in other applications.

All objects have a border. (The border of a line is the line itself.) All objects except lines have a *fill*, the area within the border. You can change the border's width, color, and pattern, and the fill's color and pattern before or after you draw an object.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ objects, creating

Drawing objects in a layout

Before you draw an object, you select the appropriate drawing tool in the tool panel. FileMaker Pro uses the preset line width, pen color, and pattern, and it fills the object with the current fill pattern and color (for all objects except lines). You can change these attributes before or after you draw the object. (See "Changing the appearance of objects" on page 3-50.)

Status area control

No tools visible? If you don't see the status area with the tool panel on the left of the window, choose Layout from the Mode menu, and then click the status area control at the bottom of the screen.

To draw a	Do this
Line, or straight horizontal, vertical, or diagonal line	Select the line tool, and then position the center of the crosshair pointer at the line's starting point. Drag the pointer until the line is the length you want. For a straight horizontal, vertical, or diagonal line, hold down Shift and drag the pointer until the line is the length you want
Rectangle or square	Select the rectangle tool. Position the center of the crosshair pointer where you want any corner of the rectangle or square to start. For a rectangle, drag the pointer diagonally until the rectangle is the size you want. For a square, hold down Option and drag the pointer diagonally until the square is the size you want
Rounded rectangle	Select the rounded rectangle tool. Position the center of the crosshair pointer where you want any corner of the rounded rectangle to start. Drag the pointer diagonally until the rectangle is the size you want.
Oval or circle	Select the oval tool. Position the center of the crosshair pointer where you want the oval or circle to start. For an oval, drag the pointer in any direction until the oval is the size you want. For a circle, hold down Option and drag the pointer in any direction until the circle is the size you want.

An object is selected when you finish drawing it. To deselect an object, click a blank area of the layout or any tool in the tool panel.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ drawing

Adding graphics in a layout

You can add graphics anywhere on a layout. Use a graphic in a layout instead of a container field whenever you want the same image (like a company logo) on every record or report.

1. Copy the graphic from the application it was created in.
2. In the FileMaker Pro layout, choose Paste from the Edit menu.
3. Position and resize the graphic as needed in the layout.

   See “Positioning and sizing objects” on page 3-40 and “Resizing objects” on page 3-50. You resize the display of a graphic without changing its original size.

Keep these points in mind:

- You can import a graphic by choosing Import/Export from the File menu, and then choosing Import Picture. See “Working with container fields” on page 4-6.
- To display a different graphic, sound, or movie in each record, add a container field. See “Formatting graphics in individual container fields” on page 3-67.
- You can also import a graphic onto a layout. When you import a graphic, you can choose to store the graphic in the database file or externally. If you move or delete a graphic file that’s stored externally, FileMaker Pro can’t display the graphic on the layout. See “Importing graphics” on page 4-6.

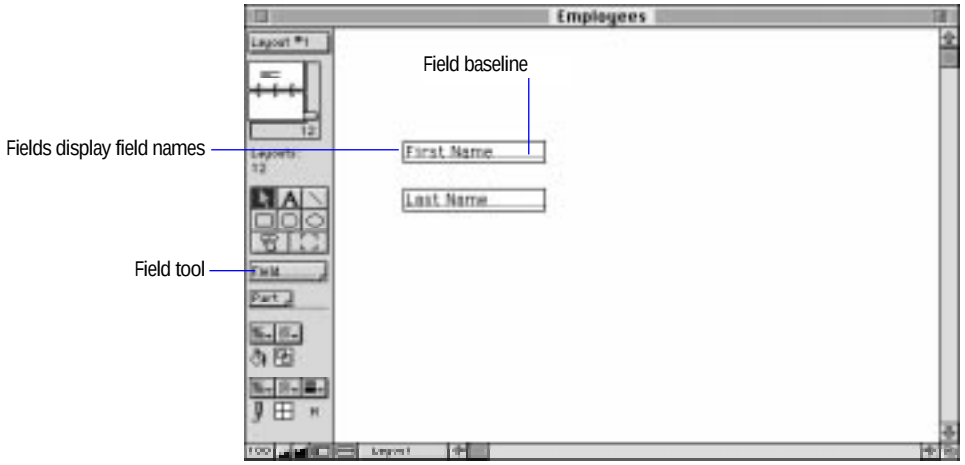
? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ graphics

Working with fields in a layout

When you first define fields for a new database file, FileMaker Pro adds them to the Standard layout, with field labels for each field. Later, you can add fields from the database file to the current layout, delete fields you don't want displayed or printed from the current layout, and determine the format in which you want data displayed in fields when the current layout is used. (To prevent fields that you define later from being added to the current layout, see "Setting layout preferences" on page 9-3.) A field that doesn't appear on a layout still exists in the database file, and its data can still be used in calculations and summaries.

Fields on a layout are objects, which you can select, move, resize, and reshape, just like other objects. Each field displays its field name, formatted with the preset attributes for font, size, style, alignment, line spacing, and color, so you can easily identify it. Fields of all types (except container fields that don't hold text) display baselines to indicate where the data appears when you add or edit records.



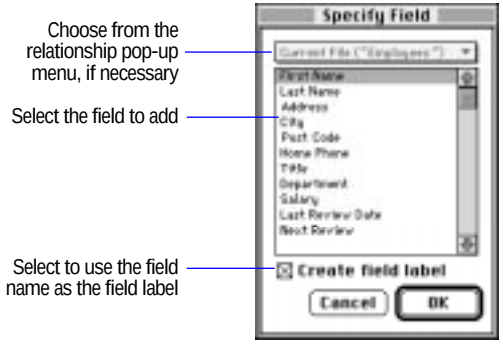
Adding fields to a layout

You can add a field to a layout at any time. A field can be added anywhere on any layout, as many times as you want. You can get different results by placing the same field in different locations on the layout. For example:

- Add the same summary field to a subsummary part to calculate totals for each group of sorted records, and to a grand summary part to get totals for all the records in the file.
- Add a field to the header or footer parts to repeat data from the first record or the last record on the page as a header or footer. (You might add a Last Name field to the header in a telephone directory.)

To add a field to a layout:

1. In Layout mode, hold down the Field tool and drag the field to the layout part in which you want the field to be.
2. In the Specify Field dialog box, select options for the new field.



3. Click OK.

After you add fields to a layout, you can work with them in the following ways:

To	Do this
Redefine a field	Double-click the field. In the Specify Field dialog box, double-click a different field name. To include a field label, first delete the original label on the layout. Then, in the Specify Field dialog box, select Create field label
Display sample data from the current record (when the file contains data), instead of field names, in fields in the layout	Choose Sample Data from the Show menu
Choose the preset values for font, size, style, line spacing, alignment, text color, and fill color of text entered in a field	See “Working with text” on page 3-79.
Add distinctive borders and baselines	See “Adding borders, fill, and baselines to fields” on page 3-73.
Change the display formats of text, numbers, dates, and times in fields	See “Defining display formats for fields” on page 3-59.
Format a field as repeating, or format its values as checkboxes, radio buttons, a pop-up menu or a pop-up list	See “Formatting repeating fields” on page 3-72 and “Defining value lists” on page 3-75.

Keep these points in mind:

- To define a new field for the database file, which you can then add to a layout, see “Defining database fields” on page 2-3.
- When you copy fields (and field types) from a layout in one file to a layout in another, be sure the field names match. When you move fields from one layout to a layout in another file, you copy the field characteristics for that layout (including dimensions and text styles) but not the definition.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

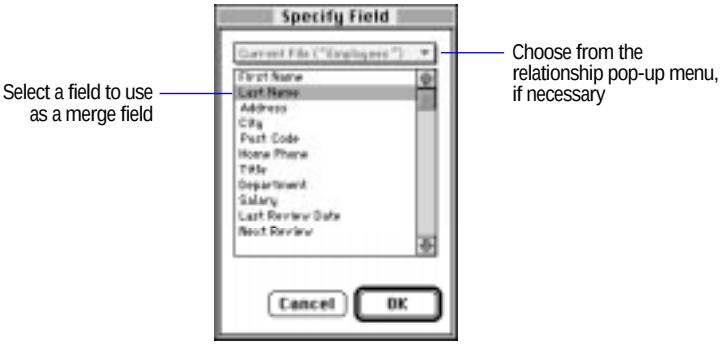
▸ fields, placing

Adding merge fields

You can add a *merge field* (a placeholder for a field's value) to a layout to display or print a field's data when you browse and print records. Use merge fields for documents like letters, envelopes, contracts, and so forth. For example, when you add the merge field <<First Name>> to the right of the text Dear, FileMaker Pro displays Dear Leon, when the First Name field contains "Leon".

FileMaker Pro collapses unused lines, such as an empty <<Address 2>> field.

1. In Layout mode, click where you want the merge field to appear.
2. Choose Paste Special from the Edit menu, and then choose Merge Field.
3. In the Specify Field dialog box, double-click the name of a field to use as a merge field.



Keep these points in mind:

- You can also add a merge field by typing the field name surrounded by angle brackets (<< >>) on the layout. (Be sure that the field name exists in the database and that you type it correctly.)
- If you use a text field as a merge field, the merge field picks up the text attributes (like style, color, and size) set for the data in Browse mode.
- Add symbols, like commas, and spaces where needed among merge fields on the layout.

- Merge fields display as much text as fits in the boundary of the defined field. You can adjust the size of the field to display as much data as you want.
- You format merge fields the same way you format other FileMaker Pro fields. To assign formats to values in a merge field, select the merge field and the << and >> symbols, and then select formatting options. See “Defining display formats for fields” on page 3-59 and “Changing the appearance of text” on page 3-88.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ merge fields

Deleting a field from a layout

To delete a field from a layout, in Layout mode, click the field and press Backspace or Delete. When you delete a field from a layout, the field and its data remain in the database file. (To delete a field from a database file, see “Changing field definitions” on page 2-26.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ fields, deleting

Defining display formats for fields

Display formats make data in fields look consistent when the data is displayed or printed. The formats don’t change the data as stored in the file. For example, a number field can be formatted to display three decimal places. You can do the following:

- Set no formats in FileMaker Pro. When you set no formats, FileMaker Pro displays numbers, dates, and times according to the system formats set in the Numbers and Date & Time control panels at the time the file was created. (See appendix B, “Working with international files” and the documentation that came with your computer.)
- Set default display formats in FileMaker Pro for all text, number, date, time, and container fields you plan to define (see “Setting default display formats,” below).
- Define data formats individually in FileMaker Pro for existing text, number, date, time, and container fields (see the sections beginning on page 3-60).

On a field by field basis, each layout can have a different set of formats. For example, suppose you format number fields to display a currency symbol, thousands separators, and two decimal places. If the currency symbol is a dollar sign ($), the thousands separator is a comma (,), and the decimal separator is a period (.), the value 5000 displays as $5,000.00. However, only the value 5000 is stored in the file.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ formatting fields

Setting default display formats

Set default display formats for newly created fields. Default formats set in FileMaker Pro override formats set in the Numbers and Date & Time control panels and affect only FileMaker Pro files. Default formats apply to newly defined fields added to the current and new layouts.

1. With no fields selected in Layout mode, choose Text, Number, Date, Time, or Graphic from the Format menu.
2. In the Default Format dialog box, select options, and then click OK.

You can also set a default display format if you have just added a new field to a layout.

1. Drag a new field to a layout. Before deselecting that field, choose Text, Number, Date, Time, or Graphic from the Format menu.
2. In the Format dialog box, select options, and then click OK.

   See the following sections for information on data formatting options for each field type.

You can also set display formats for individually selected fields, which replace the current default settings. See the following sections.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ formatting fields

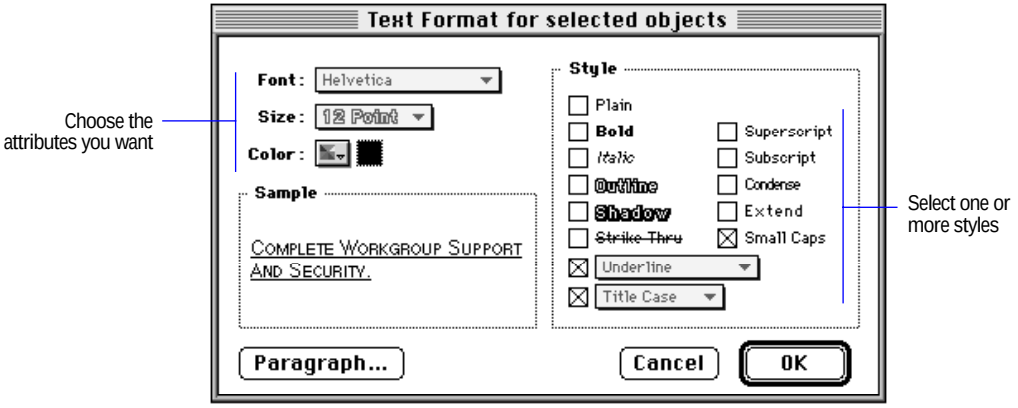
Formatting text attributes in individual fields

You can format the text attributes (such as the font, size, and style) for data in all field types that contain characters. All the characters in one field (including all repetitions of repeating fields) share the text attributes. You can also format text objects in the layout.

1. In Layout mode, select a field or text object, and then choose Text from the Format menu.

   To format more than one field at a time, Shift-click each field to format, and then choose Text from the Format menu.

2. In the Text Format dialog box, select options, and then click OK.



Keep these points in mind:

- You can hold down Option as you double-click a field to display the format dialog box for that field type.
- To set text attributes individually, choose Font, Size, Style, Align Text, Line Spacing, or Text Color from the Format menu, and then choose a formatting command.
- To specify a custom size or line spacing, choose Size or Line Spacing from the Format menu, and then choose Custom.
- You can change the font, size, or style of text fields in a record by selecting data and setting these attributes in Browse mode. The data appears with those text attributes wherever the data is displayed.
- Text attributes do not appear when data is viewed with Web browser software using FileMaker Pro Web Companion.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ text, formatting

Formatting numerical values in individual fields

Format numbers for number fields, or calculation, summary, or global fields that have a numeric result. You can format a field as a decimal number or a Boolean number (to produce a true or false result).

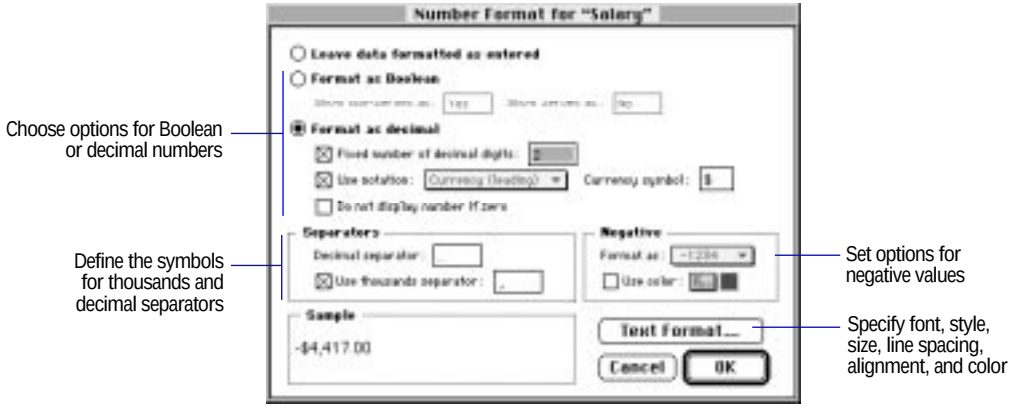
A number field can hold up to 255 characters. However, for calculation purposes FileMaker Pro uses only the first 15 numeric characters. Adjust the length of the line by changing the width of the field on the layout, if needed.

1. In Layout mode, select a number field, and then choose Number from the Format menu.

   To format more than one number field at a time, Shift-click each field to format, and then choose Number from the Format menu.

2. In the Number Format dialog box, select options, and then click OK.

To display numbers	Do this
Exactly as typed or entered	Click Leave data formatted as entered
As Boolean numbers	Click Format as Boolean. To change the default values, type up to seven characters for Show non-zeroes as and Show zeroes as (such as True and False)
As decimals	Click Format as decimal, and then select options. See the table in the next section to change default decimal options
With different text attributes	Click Text Format, and then select options. (See "Formatting text attributes in individual fields" on page 3-60.)



Keep these points in mind:

- Numbers with decimal digits that exceed the specified number are rounded. If you specify 0, no decimal digits are displayed. If you specify a negative value, numbers are rounded to the number of positions left of the decimal separator. (For example, for the field value 789.78, 2 fixed decimal places displays 789.78; 0 fixed places displays 790; and –2 fixed places displays 800.) For calculations and summaries, FileMaker Pro uses the original, unrounded, number.
- Only numbers are displayed and printed in a number field formatted as Boolean or decimal (except for symbols set in the Number Format dialog box). To display text and symbols (as in @1.98 per pound) in a number field, don't define a number format.
- When you work with a file created with different system formats and you want to use the formats set on your computer, choose Use System Formats from the Format menu. See appendix B, "Working with international files."

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ numbers, formatting

Changing options for numerical data

You can change the default symbols used as the thousands separator and decimal separator. Unless you changed them previously, the default settings are taken from the Numbers control panel. You can also change the default format for negative numbers.

1. In Layout mode, select a number field, and then choose Number from the Format menu.
2. In the Number Format dialog box, click Format as decimal, select options, and then click OK.

To change the default	Do this
Number of decimal digits	Select Fixed number of decimal digits, and type a new value
Notation symbol and position	Select Use notation, and then choose Percent (to display a percent symbol after the value, Currency (leading) (to display a currency symbol before the value) or Currency (trailing) (to display a currency symbol after the value)
Currency symbol	For Currency symbol, select the current default, and type a new one

To change the default	Do this
Display of zero values	Select Do not display number if zero
Decimal separator	For Decimal separator, double-click the current default, and then type a new one
Thousands separator	Select Use thousands separator, double-click the current default, and then type a new one
Format for negative numbers	For Format as, choose an option. To display negative numbers in color, select Use color, and then choose a color

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ numbers, formatting

Formatting date values in individual fields

Format dates in date fields, or calculation, summary, or global fields that have a date result. You can also leave a date unformatted, so it will display and print as typed. A date field can hold values from 1 January 0001 to 31 December 3000.

1. In Layout mode, select a date field, and then choose Date from the Format menu.

   To format more than one date field at a time, Shift-click each field to format, and then choose Date from the Format menu.

2. In the Date Format dialog box, select options, and then click OK.

To display dates	Do this
Exactly as typed or entered	Click Leave data formatted as entered
In a particular format	Click Format as, and then choose a format. To change the default separator between parts of numeric dates, for Numeric separator, type another character
In a custom format	Click Custom, and then choose options and separator characters for day of week, month, date of month, and year
With leading zeroes (as in 01/02/98) or leading spaces in numeric parts of dates	Choose options for For day numbers, For month numbers, or both
With different text attributes	Click Text Format, and then select options. (See "Formatting text attributes in individual fields" on page 3-60.)

Keep these points in mind:

- Be sure to size the date field on the layout according to the length of the date. For example, the date Wednesday, May 5, 1999 needs more room than 5/5/99.
- You can also set the format for the system date symbol (//). Select the symbol first. See “Displaying special information” on page 3-83.
- When you work with a file created with different system formats and you want to use the formats set on your computer, choose Use System Formats from the Format menu. See appendix B, “Working with international files.”

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ date fields

Formatting time values in individual fields

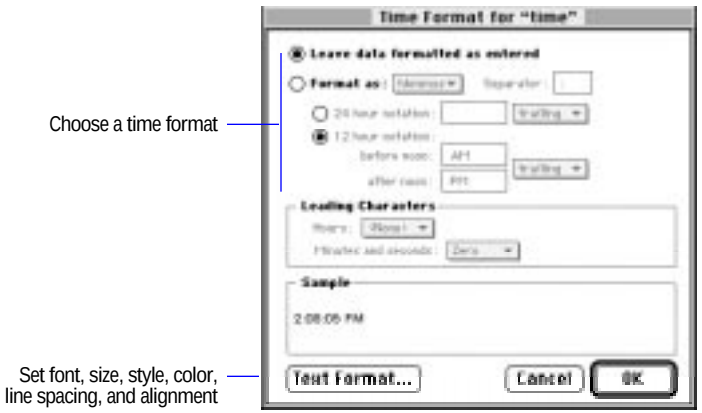
Format times in time fields, or calculation, summary, or global fields that have a time result.

1. In Layout mode, select a time field, and then choose Time from the Format menu.

   To format more than one time field at a time, Shift-click each field to format, and then choose Time from the Format menu.

2. In the Time Format dialog box, select options, and then click OK.

To display times	Do this
Exactly as typed or entered	Click Leave data formatted as entered
In a particular format	Click Format as, and then choose a format. You can set a different unit separator (like : or –), 24-hour or 12-hour time, and a trailing or leading suffix (like AM or PM)
With leading characters	For Leading Characters, choose options for Hours, Minutes and seconds, or both
With different text attributes	Click Text Format, and then select options. (See "Formatting text attributes in individual fields" on page 3-60.)



Keep these points in mind:

- You can also set the format for the system time symbol (::) on the layout. Select the symbol first. See "Displaying special information" on page 3-83.
- When you work with a file created with different system formats and you want to use the formats set on your computer, choose Use System Formats from the Format menu. See appendix B, "Working with international files."

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ time fields

Formatting graphics in individual container fields

When you define a container field, FileMaker Pro displays the boundaries of the field in Layout mode, as it does for other fields. You can format the graphic in a particular way, to maintain the original proportions of the graphic as it's entered in the field, or to align the graphic horizontally or vertically within the boundaries.

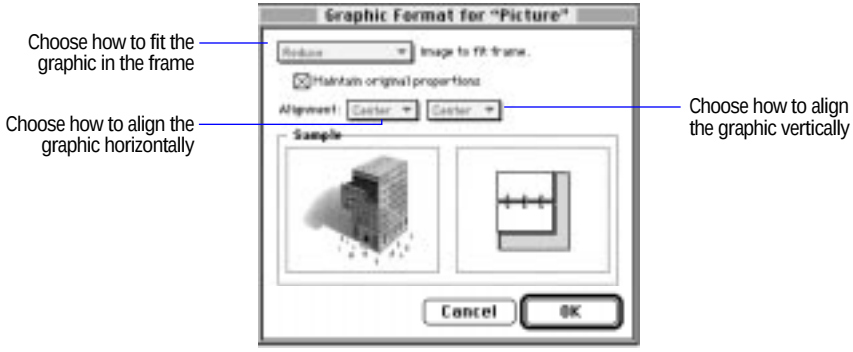
You can change the dimensions of container fields on a layout without affecting the original shape and size of the graphic.

1. In Layout mode, select a container field, and then choose Graphic from the Format menu.

   To format more than one container field at a time, Shift-click each field to format, and then choose Graphic from the Format menu.

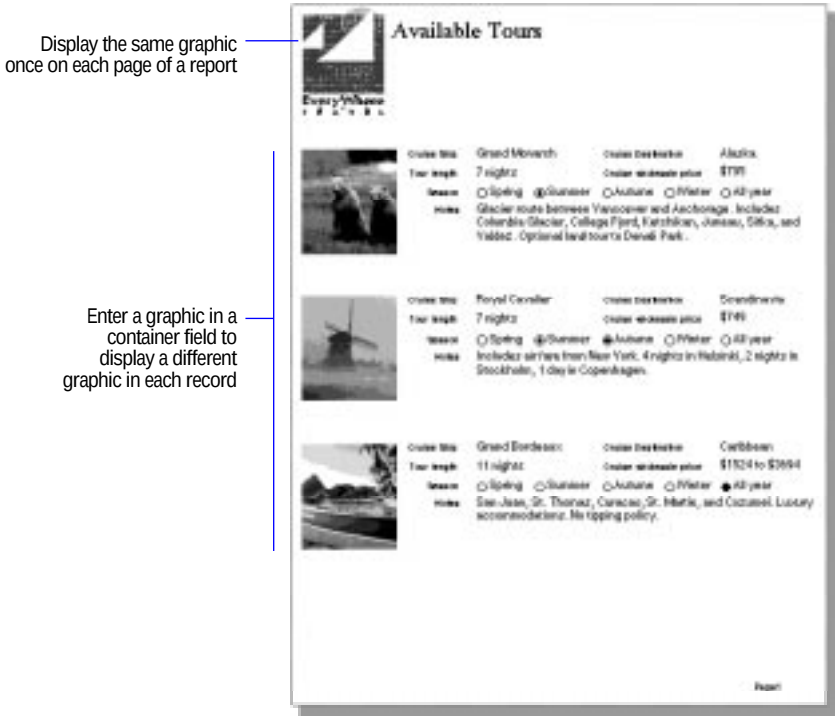
2. In the Graphic Format dialog box, select options, and then click OK.

To	Do this
Determine how to fit the graphic in the frame	For *<value>* image to fit frame, choose an option
Keep the graphic's original proportions when it's in the field	Select Maintain original proportions
Set the horizontal and vertical alignments	For Alignment, choose options for a vertical and a horizontal alignment



Keep these points in mind:

- For information about adding a graphic to a container field, see "Working with container fields" on page 4-6.
- You can also add graphics to a layout as objects. See "Adding graphics in a layout" on page 3-54.


Display the same graphic once on each page of a report
Enter a graphic in a container field to display a different graphic in each record
Available Tours

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ fields, formatting

Determining data entry in fields

You can have the entire contents of a field selected when you select the field in Browse mode (otherwise, FileMaker Pro places the insertion point after the last character in the field). You can also allow or prevent entry into a field (preventing entry is useful when you want users to see the data in the field on a layout but not modify it).

1. In Layout mode, select a field, and then choose Field Format from the Format menu.
2. In the Field Format dialog box, select options, and then click OK.
   - To select all the field's contents when the field is selected, select Allow entry into field, and then click Select entire contents of field on entry.
   - To prevent entry into a field, deselect Allow entry into field. (To allow entry into the field, select this option.)

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ fields, customizing

Setting the tab order for data entry

When you press Tab in Browse mode, fields are normally selected from left to right, top to bottom. You can change this preset tab order, set a custom tab order, omit fields from the tab order, and create a tab order specifically for repeating fields.

Note Setting a tab order has no effect on data entry when records are edited using FileMaker Pro Web Companion Instant Web Publishing.

1. Choose Set Tab Order from the Mode menu.

Each arrow indicates the field's position in the tab order

2. Select options.

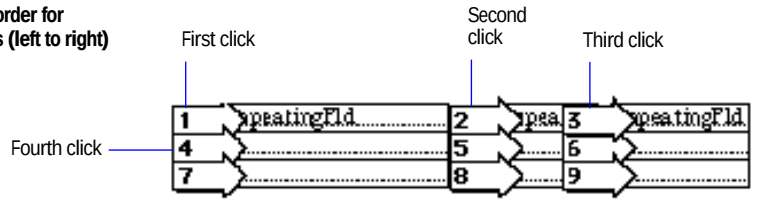
To	Do this
Renumber individual arrows	In the Set Tab Order dialog box, click Edit tab order. In the layout, click an arrow whose order you want to change, and then type a new number
Remove numbers from all arrows and set a new tab order	In the Set Tab Order dialog box, click Create new tab order. In the layout, click the arrows in the order you want
Omit fields from the tab order	As you set a new tab order, don't click arrows for the fields to omit. For fields that already display a number, select the number, and then press Delete
Set a tab order for values in repeating fields	See the information following these steps
Restore the default tab order (left to right, top to bottom)	Click Revert to Default

3. Click OK.
4. If you omitted fields, click Omit in the alert message.

Keep these points in mind:

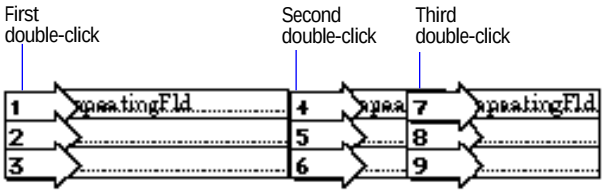
- A blank arrow indicates a field omitted from the tab order.
- You can tab into a field that's formatted as radio buttons and checkboxes, and use the keyboard to make a selection. See "Entering data from a value list" on page 4-10.
- You can tab into repetitions of repeating fields from left to right or top to bottom. (For example, create a tab order that selects the first repetition for all fields before it selects the second repetition.) Start setting the tab order with the topmost or leftmost repeating field. When you create a tab order, the arrow blinks as you select the rest of the fields for the tab order and stops when you return to the first repeating field selected. FileMaker Pro completes the tab order for the repeating fields based on your previous selections.

Horizontal tab order for repeating fields (left to right)



To enter all the values in a single repeating field before you tab into any other field, double-click the field's arrow.

Vertical tab order for repeating fields (top to bottom)

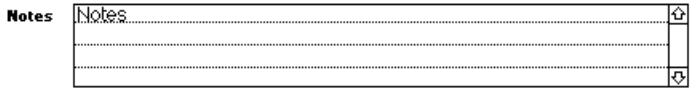


? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

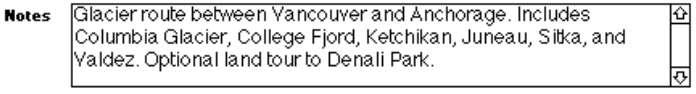
- fields, entering data

Adding scroll bars to fields

Add a vertical scroll bar to any field on your layout (except a container, summary, or repeating field), to see more data than fits in the field.



Layout mode


Notes
Glacier route between Vancouver and Anchorage. Includes Columbia Glacier, College Fjord, Ketchikan, Juneau, Sitka, and Valdez. Optional land tour to Denali Park.

Browse mode

1. In Layout mode, select a field, and then choose Field Format from the Format menu.
2. In the Field Format dialog box, click Standard field.
3. Select Include vertical scroll bar, and then click OK.

Scroll bars are always displayed if you set the field borders option for the right side of the field. Otherwise, they display only when you tab into the field. See "Adding borders, fill, and baselines to fields" on page 3-73.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- scroll bars

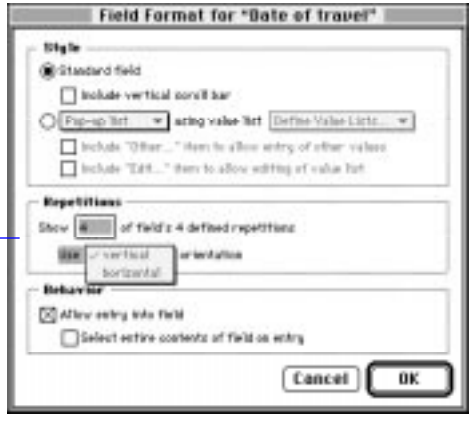
Formatting repeating fields

To fine-tune a repeating field, you can choose the number of repetitions visible in the current layout, and the orientation of the repetitions.

Note Before you begin, you need to define a repeating field. See "Defining database fields" on page 2-3 and "Defining repeating fields" on page 2-12.

1. In Layout mode, select the repeating field to format, and then choose Field Format from the Format menu.
2. In the Field Format dialog box, select options, and then click OK.

To	Do this
Set the number of visible repetitions in the repeating field	For Show *<value>* of field's *<value>* repetitions, type a number
Choose an orientation for displaying repetitions	For Use *<value>* orientation, choose vertical to display repetitions stacked (as in a column); choose horizontal to display them side by side (as in a row)



Set the number of repetitions visible in a repeating field, and their orientation

Note Data added to a repeating or calculation field with a formula that uses repeating fields is always maintained and can be used, even if you change the layout to display fewer repetitions or change the field to nonrepeating.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

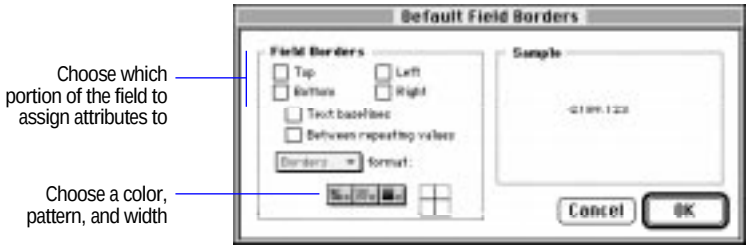
- repeating fields

Adding borders, fill, and baselines to fields

You can add or change the borders, fill pattern, and *baselines* (a horizontal line in a field to help you align data) for fields, before or after you add fields to a layout.

1. In Layout mode, to set attributes for new fields, start with no fields selected. To change the attributes of existing fields, select the fields to change.
2. Choose Field Borders from the Format menu.
3. In the Field Borders dialog box, select options, and then click OK.

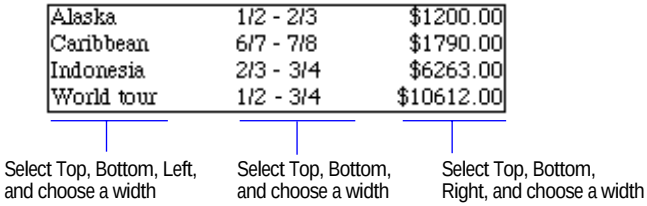
To	Do this
Set attributes for field borders	Select any combination of Top, Bottom, Left, and Right. For *<value>* format, choose Borders from the pop-up menu, and then choose a color, pattern, and width
Add baselines for field data and set attributes for the baselines	Select Text baselines. For *<value>* format, choose Baselines from the pop-up menu, and then choose a color, pattern, and width
Set a fill pattern for fields	For *<value>* format, choose Fill from the pop-up menu, and then choose a color and pattern from the palettes
Add borders between repetitions in repeating fields	Select Between repeating values. For *<value>* format, choose Borders from the pop-up menu, and then choose a color, pattern, and width from the palettes. (See the examples following these steps)



Keep these points in mind:

- Changes made in the status area to the preset pattern, color, and line width settings replace settings in the Field Borders dialog box, and vice versa. See "Changing lines, colors, and patterns" on page 3-51.
- You can also use the fill controls in the status area to fill a field with a color and pattern. See "Changing lines, colors, and patterns" on page 3-51.

One box around all data in three repeating fields


Alaska 1/2 - 2/3 $1200.00
Caribbean 6/7 - 7/8 $1790.00
Indonesia 2/3 - 3/4 $6263.00
World tour 1/2 - 3/4 $10612.00
Select Top, Bottom, Left, and choose a width
Select Top, Bottom, and choose a width
Select Top, Bottom, Right, and choose a width

Lines between the repeating values

Alaska 1/2 - 2/3 $1200.00
Caribbean 6/7 - 7/8 $1790.00
Indonesia 2/3 - 3/4 $6263.00
World tour 1/2 - 3/4 $10612.00
For each field, select the Between repeating values option, and then choose a line width

Left and right borders for the middle field

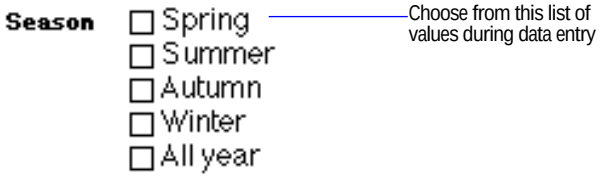
Alaska 1/2 - 2/3 $1200.00
Caribbean 6/7 - 7/8 $1790.00
Indonesia 2/3 - 3/4 $6263.00
World tour 1/2 - 3/4 $10612.00
For the middle field, select Left and Right, and then choose a width

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- fields, customizing

Defining value lists

To save time and ensure accuracy during data entry, define frequently used text, number, date, or time values to display in a pop-up menu or pop-up list, or as checkboxes or radio buttons. When you enter data, choose from the list of defined values.



Value lists aren't attached to any field definition but can be shared by several fields. The values in a value list can be user-defined or based on the values in a field in the same file or in a different file.

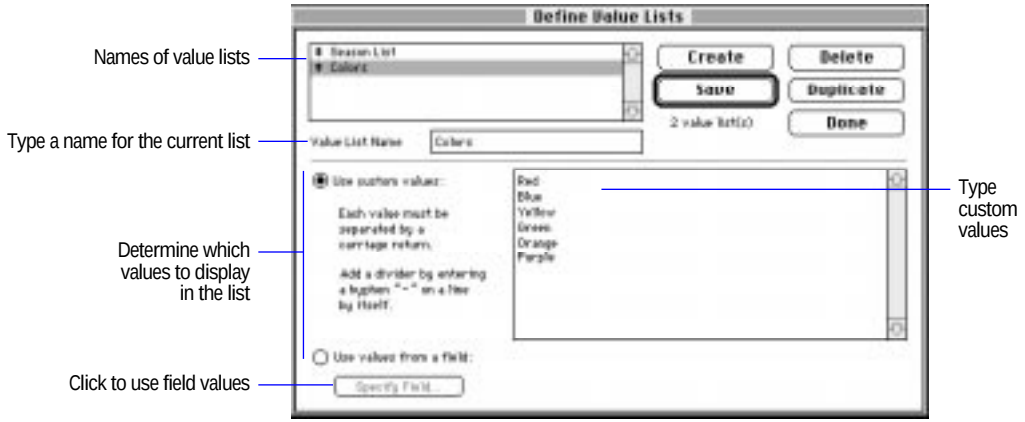
After you define a value list, you can use it to validate any field. (See "Choosing data entry options" on page 2-7.)

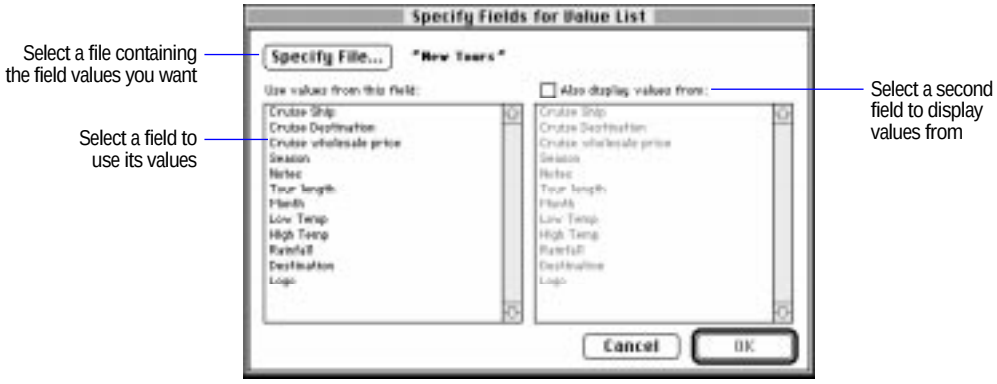
To define a value list:

1. Select a field on the layout for which you want to use a value list, and then choose Field Format from the Format menu.
2. In the Field Format dialog box, for Style, select Pop-up list using value list *<value>*, and then choose Define Value Lists from the pop-up menu.
3. In the Define Value Lists dialog box, for Name, type a name for the list, and then click Create.

4. Define the value list.

To	Do this
Create a list of values	Select Use custom values, and then type each value on a separate line, in the order you want them to appear. Press Return to separate each value
Choose from existing values in a different field	Select Use values from a field, and then click Specify Field. In the Specify Field for Value List dialog box, to choose from a field in a different file, click Specify File, and then choose a filename. For Use values from this field, click the name of a field, and then click OK
Choose from existing values in a second field	In the Specify Field for Value List dialog box, select Also display values from, click a field name, and then click OK Select this option to display the values from a corresponding field next to the values in your value list. For example, to help with data entry, you could display part names next to part numbers
Produce a separator line between items in a pop-up menu or pop-up list, or produce spaces between radio buttons or checkboxes	In the list of custom values, type a hyphen on a separate line where you want the separator line or space to appear, and then press Return
Delete a value list	In the list of names, select the value list, and then click Delete
Duplicate a value list	In the list of names, select the value list, and then click Duplicate





5. Click Save, and then click Done.

Keep these points in mind:

- You can open the Define Value Lists dialog box quickly by choosing Define from the File menu, and then Value Lists.
- You format a value list as checkboxes, radio buttons, a pop-up menu, or a pop-up list in Layout mode. See the next section.
- You can also define a value list or attach value lists to fields in the Validation dialog box (of Define Fields) or in the Sort dialog box.
- You can edit a value list in Browse mode. See “Entering data from a value list” on page 4-10.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

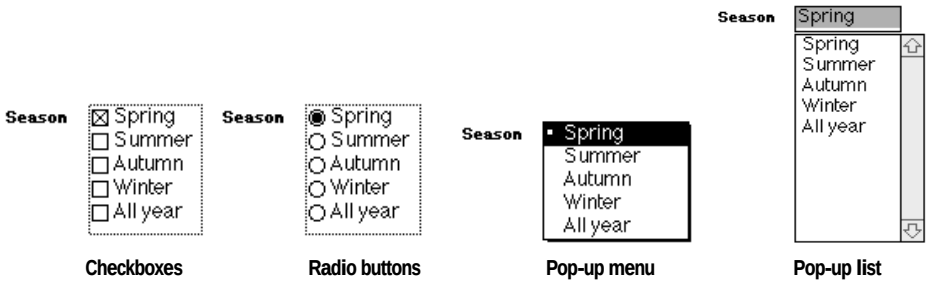
▸ value lists

Formatting fields with value lists

After you define a value list, you can make the following changes:

- Display values in a pop-up menu, a pop-up list, with radio buttons, or with checkboxes.
- Add an Other item to checkboxes, radio buttons, pop-up menus, and pop-up lists so you can enter a value that’s not in the list.

- Add an Edit item to checkboxes, radio buttons, pop-up menus, and pop-up lists so you can edit the values in the list.



Note Before you begin, you need to define a value list. See "Defining database fields" on page 2-3 and "Defining value lists" on page 3-75.

1. In Layout mode, select the field to format, and then choose Field Format from the Format menu.
2. In the Field Format dialog box, select options.
   - To choose a format for a value list, for *<value>* using value list, choose a format, and then choose the name of a value list or define a new value list.
   - To add an Other item to a value list, for *<value>* using value list, choose a format, and then choose the name of a value list or define a new value list. Then select Include "Other..." item to allow entry of other values.
   - To add an Edit item to a value list, for *<value>* using value list, choose a format, and then choose the name of a value list or define a new value list. Then select Include "Edit..." item to allow editing of value list.
3. Click OK.

Note Pop-up lists, pop-up menus, checkboxes, and radio buttons appear when you publish a database on the Web using FileMaker Pro Web Companion Instant Publishing. However, Edit and Other items do not appear.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ value lists

Working with text

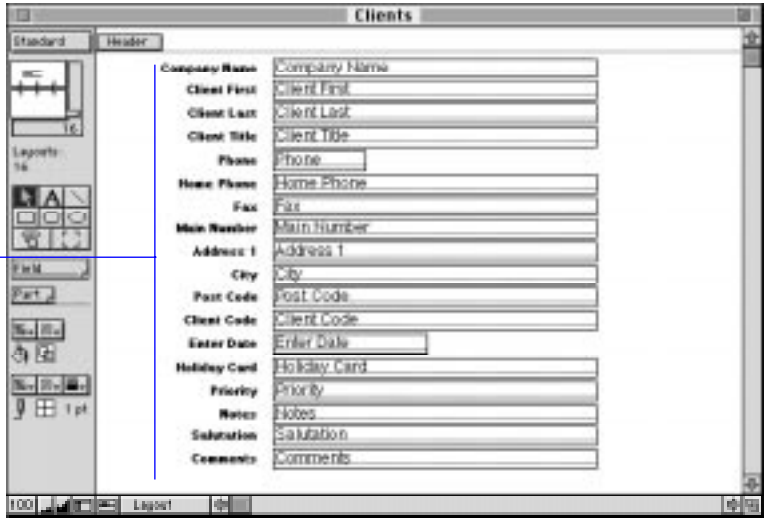
Text makes a layout easier to use and understand. When you add text to the body of a layout, FileMaker Pro displays the text with every record. Add text for labels or column headings that identify fields, instructions on a form, report titles, page or record numbers, and so on. On some predefined layout types, FileMaker Pro displays the field name as text.

Text typed or pasted on a layout is a text object (except when it's part of a graphic), which you can select, group, move, shape, cut, or copy, as any other object.

Note Text objects do not appear when you publish a database on the Web using FileMaker Pro Web Companion Instant Web Publishing.

FileMaker Pro can use all the fonts installed in the System Folder of your current startup disk. If you have Helvetica on your system, FileMaker Pro uses it by default. Otherwise, it uses the Geneva computer font. To update your list of fonts, see the documentation that came with your computer.

You can set the font for text before you type it, or you can change the font of existing text or field objects.



Changing these field labels doesn't affect the actual field names

Keep these points in mind:

- You can also use drag and drop and context menus to edit text. See "Using drag and drop to move information" on page 4-14 and "Editing objects and data quickly using the context menu" on page 3-42.
- Use standard editing conventions when working with text. For keyboard equivalents and other keyboard shortcuts, see *FileMaker Pro Quick Reference* on the back cover of this user's guide.
- To use the attributes of an existing field or text object to set the preset attributes for all text, hold down Command and click the field or text object.
- To change text attributes, see "Changing the appearance of text" on page 3-88.
- You can change attributes for the text in a field when you set the field's format. See "Formatting text attributes in individual fields" on page 3-60.
- To check the spelling of text, see "Important Always quit FileMaker Pro before you turn off your computer." on page 1-13.

Typing text

When you add text, you see a temporary border around the object, to indicate the object's boundaries. The border doesn't display or print when you browse, preview, or print records.

To type text:

Text tool

1. In Layout mode, select the text tool in the tool panel.
2. With the I-beam pointer, click in the layout where you want to add text.
3. Type the text.

   You can also type text with other tools selected. If you click on the layout and begin typing, FileMaker Pro creates a text object where you click.

To control the size and position of the borders before typing:

1. In Layout mode, select the text tool, and then position the pointer where you want the text to begin.
2. Drag the pointer until the border is the size you want.
3. Type the text.

Keep these points in mind:

- The text appears in the current font, style, line spacing, color, and alignment. To set or change text attributes, see “Changing the appearance of text” on page 3-88.
- To set an option to keep layout tools selected until you select another tool, see “Setting layout preferences” on page 9-3.
- FileMaker Pro adds text to a layout in different places, depending on what you select.

When you select	Text appears
Nothing on the layout and start typing	In the last place you clicked
A text object and start typing	In place of the selected text object
An object (such as an oval) and start typing	Within the boundaries of the selected object (the text isn’t actually inside the object but layered in front of it)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- text entering
- text tool

Selecting text

Before you select text, select the object (in Layout mode) or field (in Browse mode) by clicking it. Then:

To select	Click the text tool and
Individual characters	With the pointer, drag through the characters
A word	Double-click the word
A line of text (the first character in the field or object to the last character in the field or object on the same line)	Triple-click anywhere in the line
A paragraph of text	Click the block of text four times
All text in a field or text object	Click the field or object five times

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- text, entering

Editing text

You can make changes to text after you type it on the layout.

To	Do this
Replace text	Select the text, and then type the new text
Paste a copy of text elsewhere	Select the text, and then choose Copy from the Edit menu. Click where you want the text to appear, and then choose Paste from the Edit menu
Remove text and paste it elsewhere	Select the text, and then choose Cut from the Edit menu. To paste the cut text, click where you want the text to appear, and then choose Paste from the Edit menu
Edit text quickly using commands in a pop-up menu	See “Editing objects and data quickly using the context menu” on page 3-42.
Delete text permanently	Select the text, and then press Delete. FileMaker Pro doesn’t place your selection on the Clipboard, and you can’t paste it anywhere
Paste text from a different application or desk accessory	In the other application or desk accessory, select the text. Choose Copy or Cut from the Edit menu. Click where you want the text on the FileMaker Pro layout, and then choose Paste from the Edit menu

Keep these points in mind:

- To restore text you deleted, choose Undo from the Edit menu before you do anything else in FileMaker Pro.
- Text you cut or copy stays on the Clipboard until the next time you use Cut or Copy.
- To change the appearance of text, see “Changing the appearance of text” on page 3-88.
- To rearrange text on the layout, see “Arranging objects” on page 3-44.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ text, editing

Displaying special information

You can display or print *fixed* information (like the date as it was when entered) or *variable* information (like today’s date) when you print or preview records. For example, display the current time in a report footer each time you print the report. You can also display the date, time, or user name as it is when you place it in the layout. This information stays the same whenever you display, print, or preview records.

1. In Layout mode, click where you want the variable information to display.
2. Choose Paste Special from the Edit menu, and then choose a command.

To insert	Choose	You see this on the layout
A fixed date	Current Date	The current date (taken from your computer’s calendar)
A fixed time	Current Time	The current time (taken from your computer’s clock)
A fixed user name	Current User Name	The current user name
A variable date	Date Symbol	Two slashes (//)
A variable time	Time Symbol	Two colons (::)
A variable user name	User Name Symbol	Two vertical lines (||)
A page number	Page Number	Two number symbols (##)
A record number	Record Number	Two at symbols (@@)

Note Before you print a layout that displays the current page number, you can specify the starting number in the Print dialog box. (See “ Printing” on page 6-12.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

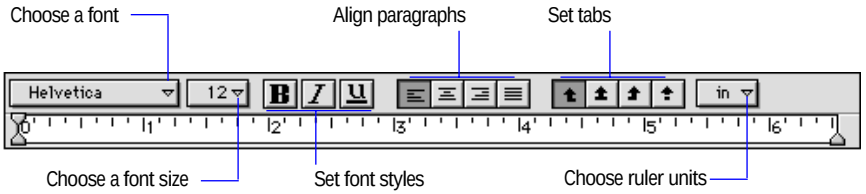
- variables

Formatting text paragraphs

You can format text, and the data in text fields, as paragraphs. For example, indent the first line of text, or insert tab stops in a text field. Set formatting options individually or all at once.

Using the text ruler

Format text on layouts and in text fields using the text ruler.



1. To display the text ruler in Layout mode, choose Text Ruler from the Show menu. In Browse mode, choose Text Ruler from the Format menu.
2. In Layout mode, select the objects to format. In Browse mode, select the text to format.

   To set tabs, indents, or margins, select text first. If you click a text object without selecting text, you can only set font, size, style, alignment, and ruler units.

3. Select options.

To	Do this
Indent the first line	Drag the left indent marker. The first line indent marker automatically follows To move the left indent marker by itself, press Option and drag it
Set the font	Choose a font from the pop-up menu
Set the font size	Choose a size from the pop-up menu
Set the font style	Click one or more style controls (bold, italic, or underline)
Set a tab	Click a set tab button, and then click the ruler where you want the tab. (Set up to 20 tabs for each text object or field.) Select a left-align, center-align, right-align, or decimal-align tab. Or double-click a tab marker to display the Tab dialog box. (See the next section)
Align text	Click an alignment control. Select left, center, right, or justified alignment
Change the unit of measure	Choose a unit from the pop-up menu
Change the left or right margin	Drag the left or right indent markers on the ruler

Note After you set tab stops within a field, use the tab stops in Browse mode by clicking inside the field, then holding down the Option key while pressing Tab.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ text ruler

Setting tabs using the Tab dialog box

1. Display the text ruler, as explained in “Using the text ruler” on page 3-84.

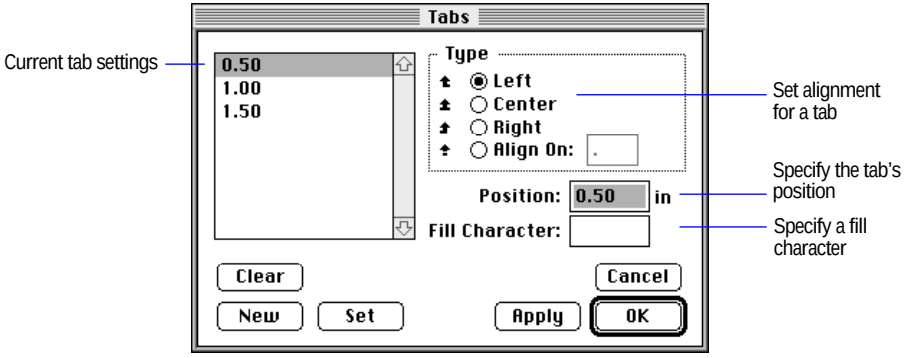
2. To display the Tabs dialog box, with text selected, double-click a tab marker in the text ruler.

You can also choose Text from the Format menu, click Paragraph in the Text Format dialog box, and then click Tabs.

3. In the Tabs dialog box, select options.

To	Do this
Set the tab alignment	For Type, select an option
Set a decimal tab	Click Align On. To set a decimal tab on a separator other than a period (.), type a character in the text box
Specify the tab's position on the ruler	For Position, type a value
Specify a fill character	For Fill Character, type a character (for example, for a phone listing, you can fill the area between the name and the telephone number with periods)
Apply the current settings and set another tab	Click Apply
Change the options for the currently selected tab	Select new options, and then click Set
Set a new tab	Select options, and then click New
Clear the current settings, to start over	Click Clear

4. Click OK when you're done setting options for all tabs.



Choose FileMaker Help Index from the ? or Help menu, and then type:

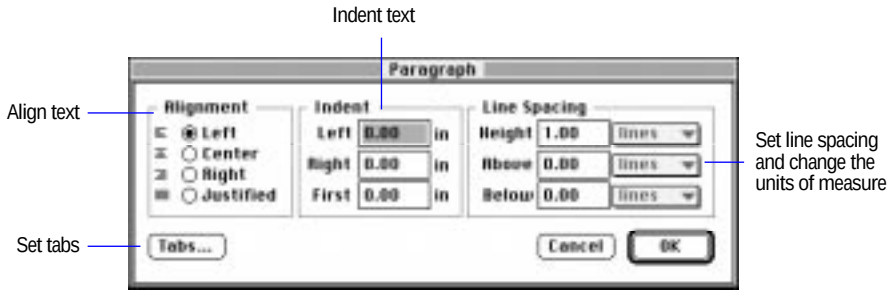
- text, formatting

Formatting paragraphs all at once

1. Display the text ruler, as explained in “Using the text ruler” on page 3-84.
2. To display the Paragraph dialog box, with text selected, double-click a blank area of the text ruler.

   You can also choose Text from the Format menu, and then click Paragraph in the Text Format dialog box.
3. In the Paragraph dialog box, select options, and then click OK.

To	Do this
Set text alignment	For Alignment, select an option
Indent all the text	For Indent, type a value for Left or Right
Indent the first line only	For Indent, type a value for First
Set line spacing	For Line Spacing, choose an option. To set the unit of measure, for Lines, choose an option
Set tabs	Click Tabs, and then see “Setting tabs using the Tab dialog box” on page 3-85.
Apply the current settings to the text without closing the dialog box	Click Apply



? Choose FileMaker Help Index from the ? or Help menu, and then type:

- paragraph attributes

Changing the appearance of text

You can change text attributes, like font or line spacing, before or after you type text. If you change text attributes after typing text, the attributes you set become the preset attributes for new text.

To set attributes for new text, start with no text selected. To change the attributes of existing text, select the text, and then make your changes.

To set	Do this
Font	Choose Font from the Format menu, and then choose a font
Size	Choose Size from the Format menu, and then choose a size
Custom font size	Choose Size from the Format menu, and then choose Custom. Type a value between 1 and 500, and then click OK. You see the new size below Custom in the Format/Size menu
Style	Choose Style from the Format menu, and then choose a style. You can apply more than one style to text. Use the Text Format dialog box to set several options at once. See the next section
Text alignment	Choose Align Text from the Format menu, and then choose Left, Center, Right, or Full. Then, you can also choose Top, Center, or Bottom. The setting applies to a whole field or paragraph, and not to individual characters. (See the next table)
Line spacing	Choose Line Spacing from the Format menu, and then choose a spacing
Custom line spacing	Choose Line Spacing from the Format menu, and then choose Custom. For Line Spacing, select options, and then click OK
Text color	Choose Text Color from the Format menu, and then choose a color

You can display text in various alignments, as shown in the following examples.

For example, this alignment	Aligns text like this
Left	Mountaineering, Inc. sunglasses provide good looks and the maximum protection against the sun's damaging ultraviolet rays. Mountaineering, Inc. sunglasses are endorsed by mountaineers and skiers
Center	Mountaineering, Inc. sunglasses provide good looks and the maximum protection against the sun's damaging ultraviolet rays. Mountaineering, Inc. sunglasses are endorsed by mountaineers and skiers

For example, this alignment	Aligns text like this
Right	Mountaineering, Inc. sunglasses provide good looks and the maximum protection against the sun's damaging ultraviolet rays. Mountaineering, Inc. sunglasses are endorsed by mountaineers and skiers
Full	Mountaineering, Inc. sunglasses provide good looks and the maximum protection against the sun's damaging ultraviolet rays. Mountaineering, Inc. sunglasses are endorsed by mountaineers and skiers
Top (when Left is also selected)	Mountaineering, Inc. sunglasses provide good looks and the maximum protection against the sun's damaging ultraviolet rays. Mountaineering, Inc. sunglasses are endorsed by mountaineers and skiers
Center (when Left is also selected)	Mountaineering, Inc. sunglasses provide good looks and the maximum protection against the sun's damaging ultraviolet rays. Mountaineering, Inc. sunglasses are endorsed by mountaineers and skiers
Bottom (when Left is also selected)	Mountaineering, Inc. sunglasses provide good looks and the maximum protection against the sun's damaging ultraviolet rays. Mountaineering, Inc. sunglasses are endorsed by mountaineers and skiers

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- text, formatting

Changing several text attributes at once

You can set or change any combination of the text attributes at one time.

1. In Layout mode, to set text attributes for new text, start with no text selected. To change text attributes of existing text, start by selecting the text object.
2. Choose Text from the Format menu.
3. In the Text Format dialog box, select options, and then click OK.

   For more information about the options, see "Formatting text attributes in individual fields" on page 3-60.

Keep these points in mind:

- Changes to preset options affect the text format of text objects and fields you add later. See "Formatting text attributes in individual fields" on page 3-60.
- You can set default paragraph styles for text and fields before typing text or creating new fields. To format text in paragraphs and fields, see "Formatting text paragraphs" on page 3-84.
- Preset attributes apply to text objects that you create by selecting the text tool and dragging to make a bounding box on the layout. If you click on the layout and begin typing text, the preset attributes don't apply.
- Text attributes do not appear when you view data using Web browser software.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ text, formatting

Blank
&
Blind

Chapter 4: Working with information in records

After you create a database and define fields, you can enter and work with data in the file. This chapter explains how to:

- add and edit data in a database
- view records in a database
- find groups of records to work with
- delete records
- sort records

For information on adding, editing, viewing, searching for, deleting, and sorting records on the Web, see chapter 11, “Publishing files on the Web.”

Important Before you read this chapter, be sure you know how to use FileMaker Pro Help, as explained in the preface, “Getting help.”

Working in Browse mode

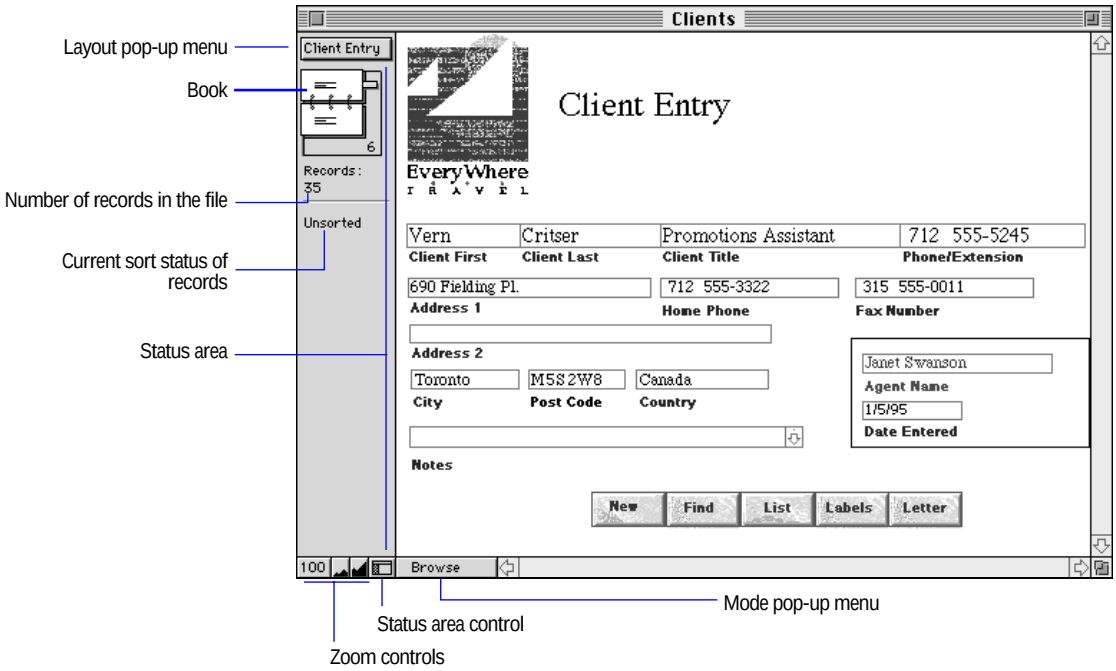
When you finish defining fields for a new file, FileMaker Pro moves to Browse mode, where you enter data into the file. (You also work in Browse mode after you open a file or when you choose Browse from the Mode menu.) In Browse mode you work with the contents of a file rather than the appearance and layout.

When you work with a new database in Browse mode, you start with a Standard layout. You can modify this layout and create additional layouts in Layout mode (see chapter 3, “Laying out and arranging information”). If the database you’re using has several layouts, you can choose a different layout from the layout pop-up menu at the top of the status area.

In Browse mode, you also view, change, find, omit, sort, copy, and delete records.

You can work with all the records in a file or a group of records, in sorted order or the order in which you added them to the file. When you choose a group of records to browse, you temporarily separate those records from the others in the file so you can work with them.

Each file has one current record at a time, which is the record on the screen if you're viewing individual records, or the record marked with a solid bar if you're viewing records in a list.



? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- records, overview

Adding data to a file

Add data to a file by typing, pasting, or copying data into blank fields of a record. FileMaker Pro saves the file as you work. The following sections describe how to add data to a file.

Selecting a field for data entry

To work with data in a field, you first select the field. The boundaries of a selected field are solid lines; boundaries of other fields are dotted lines.

To	Do this
Select a field for data entry	Click in the field. FileMaker Pro scrolls if necessary to display the field's contents. FileMaker Pro extends a field that's filled beyond the border, if the field has no scroll bar, until you move out of the field
Move to the next field in the field order	Press Tab
Move to the previous field in the field order	Press Shift-Tab

Keep these points in mind:

- You can't press Tab to move to some fields (for example, calculation and summary fields and fields omitted from the tab order) in Browse mode. You must click in them to select them, as long as the fields have been formatted to allow entry (by selecting Allow entry into field in the Field Format dialog box in Layout mode). You can't add data to calculation and summary fields, but you can copy their contents to other fields.
- To change the order in which pressing Tab or Shift-Tab moves you through the fields, see "Setting the tab order for data entry" on page 3-69.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ entering data

Adding and duplicating records

You add records to a database by using the New Record and Duplicate Record commands and then typing or pasting data into blank fields of the record. If you specified entry options to enter values automatically, you see those values entered in the record.

Duplicate an existing record to quickly add a record with the same or similar data. When you add or duplicate records, each new record is placed at the end of the file. When you browse a group of records you found (called the *found set*), new records appear at the end of the group (until you sort them).

To	Do this
Add a record	Choose New Record from the Mode menu. (You see a blank record with one field selected.) Type data into the fields. (See "Entering and changing data in fields" on page 4-4.)
Duplicate a record	Select the record to duplicate. Choose Duplicate Record from the Mode menu. You can change data as needed. (See "Entering and changing data in fields" on page 4-4.)

Note To return the current record to the way it was before you began adding or changing data, choose Revert Record from the Mode menu before you select a different record or leave the current one.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ entering data

Entering and changing data in fields

You can enter information up to the limit for the field type (for example, 255 characters in a number field), but you can see and print only as much data as fits within the field boundaries. (You can change the boundaries in Layout mode. See "Resizing objects" on page 3-50.)

To	Select the field, and then
Type in a text field	Type the text (up to 64,000 characters)
Type in a number field	Type the data
Type in a date field	Type one date on one line in each field. Type the day, month, and year as numbers (for example, 2/3/98) in the format used when the file was created or the current system format for dates (if Use System Formats is set), separated by a nonnumeric character like – (minus) or / (forward slash). Type a two-, three-, or four-digit year. Don't mix dates with other types of data For information about system formats, see appendix B, "Working with international files."

To	Select the field, and then
Type in a time field	Type the time as hours and minutes or as hours, minutes, and seconds in the format used when the file was created or the current system format for time (if Use System Formats is set), separated by a nonnumeric character like : (colon). Use 24- or 12-hour format, with or without AM or PM. (AM is assumed for a time less than 12:00.) You can type a negative 24-hour time (like –08:40:00) For information about system formats, see appendix B, "Working with international files."
Insert a tab character in a field	Press Option-Tab
Add data to a container field	See "Working with container fields" on page 4-6.
Delete a character	Place the insertion point to the right of the character, and then press Delete. Or place the insertion point to the left of the character, and then press Del
Edit data quickly, using commands in a pop-up menu	See "Editing objects and data quickly using the context menu" on page 3-42.
Replace text	Select the text, and then type the replacement. Click twice to select a word, three times to select a line, four times to select a paragraph, and five times to select the entire field contents

Keep these points in mind:

- You can add a vertical scroll bar to a field. A scroll bar lets you see all the field's contents without changing the field's boundaries. See "Adding scroll bars to fields" on page 3-71.
- In a date field, if you don't type a year, FileMaker Pro enters the current year for you.
- There are many other ways of entering data in a field, like inserting, or copying it from another source, using a lookup, or having FileMaker Pro automatically enter the data each time you create a record. See the appropriate sections in this chapter; chapter 8, "Importing and exporting data;" "Choosing data entry options" on page 2-7; and "Looking up and displaying data from other files" on page 10-1.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ entering data

Working with container fields

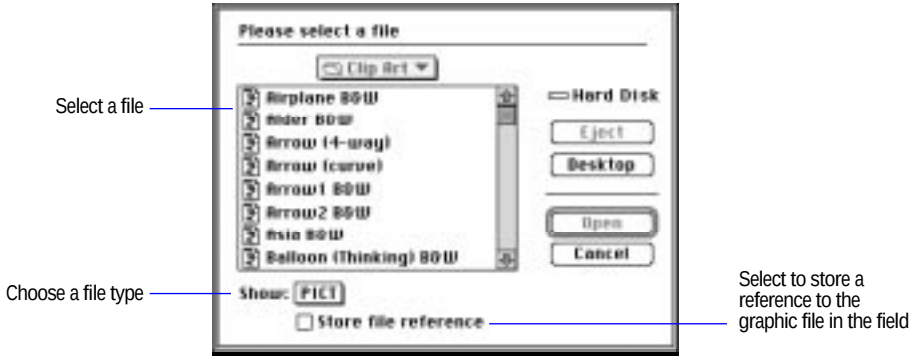
A container field can store a graphic, a sound, or a QuickTime movie.

Note Sounds and QuickTime movies are not supported in FileMaker Pro Web Companion Instant Web Publishing.

Importing graphics

1. Select the container field to import into.
2. Choose Import/Export from the File menu, and then choose Import Picture.
3. In the Import Picture dialog box, choose options for the graphic, and then click Open.

To	Do this
Choose the file to import	Select the name of the file (switch to a different folder if needed)
Store a reference to the graphic file in the field	Select Store file reference. (This keeps the file size down. However, if the file is moved or deleted, FileMaker Pro can't display the graphic.) To store the graphic in the file, deselect Store file reference



For this file type	Select	To
.CGM	Ignore Background	Discard the graphic's background
	Default Color Table	Convert Harvard Graphics .CGM colors correctly
	Maintain Dotted Lines	Keep dotted lines instead of converting them to solid lines
	Force Vector Fonts	Convert raster fonts to scalable vector fonts

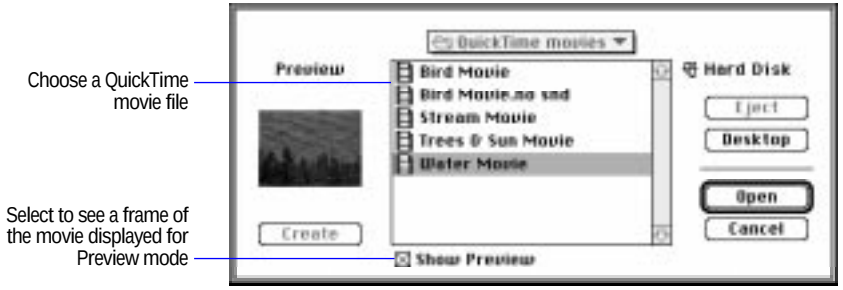
For this file type	Select	To
.PCX	Invert Colors	Reverse the graphic's colors
.DRW	Force Vector Fonts	Convert raster fonts to scalable vector fonts
	Ignore Background	Discard the graphic's background
.PIC	Force Vector Fonts	Convert raster fonts to scalable vector fonts

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ importing data

Importing QuickTime movies

1. Select the container field to import into.
2. Choose Import/Export from the File menu, and then choose Import Movie.
3. In the Import Movie dialog box, double-click the filename (change folders, if needed).



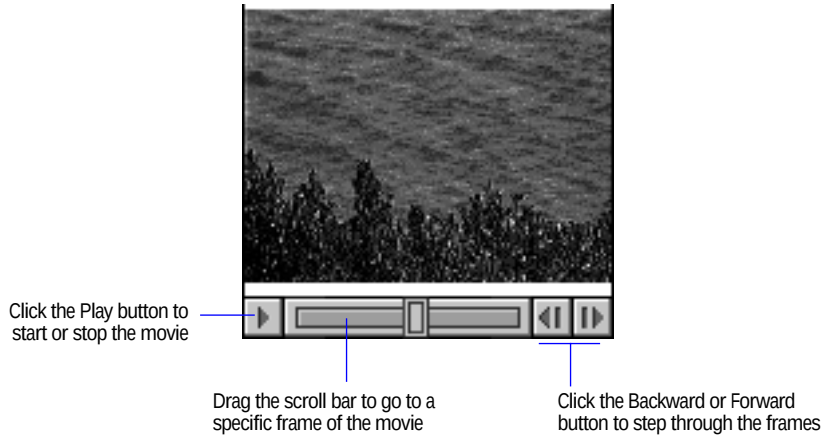
To crop or scale the first frame of the movie, see "Defining display formats for fields" on page 3-59.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ importing data

Playing QuickTime movies

To control a QuickTime movie, click the field containing the movie, and then use the movie controls.


Click the Play button to start or stop the movie
Drag the scroll bar to go to a specific frame of the movie
Click the Backward or Forward button to step through the frames

The movie in a container field is a reference to a QuickTime movie file. If you move the database to a different computer, move the movie file as well (unless you have access to it through an AppleShare network server).

Pasting graphics, movies, and sounds from the Clipboard

Cut or copy a graphic, movie, or sound in a different application by putting it on the Clipboard. Then paste it into a FileMaker Pro container field.

1. After you cut or copy the graphic, movie, or sound to the Clipboard, open the FileMaker Pro file to paste into.
2. In Browse mode, display the record to paste into, or add a new record.
3. Select the container field, and then choose Paste from the Edit menu.

To delete graphics, movies, or sounds, select the container field and press Delete, or use drag and drop to move the item to the trash (see "Using drag and drop to move information" on page 4-14). **Note** You can also drag and drop graphics and sounds into container fields. See "Using

drag and drop to move information” on page 4-14.Recording and playing

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ playing

sounds

With Sound Control Panel and a microphone, you can play and record sound.

To	Do this
Record a sound	Double-click a blank container field. In the Sound Record dialog box, click Record
Play a sound	Double-click the field where the sound is stored
Stop or pause recording	In the Sound Record dialog box, click Stop or Pause
Play back a recording	In the Sound Record dialog box, click Play

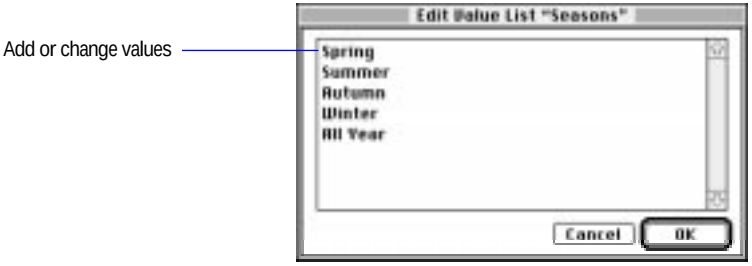
? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

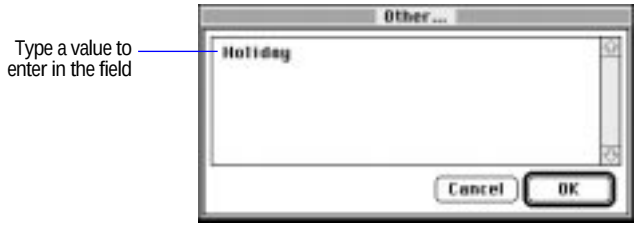
▸ sound

Entering data from a value list

in Layout mode, you can define a list of values to enter or validate data in one or more fields and format the values to appear in a pop-up list, a pop-up menu, as radio buttons, or checkboxes. You can also include an Other item (to add a value not in the list) and an Edit item (to add or change values from Browse mode) in value lists. (See "Choosing data entry options" on page 2-7 and "Formatting repeating fields" on page 3-72.)

To	Do this
Choose from a pop-up list	Select the field with the pop-up list, and then select a value by clicking the value
Choose from a pop-up menu	Select the field with the pop-up menu, and then choose a value
Choose from radio buttons	Select the field with the radio buttons, and then select a value
Choose from checkboxes	Select the field with the checkboxes, and then select a value or values
Choose an Other item	Select Other in the list of values. In the dialog box that appears, type a value, and then click OK
Hide a value list	Press Esc, or select the field again. Press Esc again to see it
Type a value that's not in a list	Select the field again, and then type the value
Deselect a checkbox	Select the selected checkbox again
Deselect a radio button	Select a different value
Deselect several radio buttons or pop-up menu items	Press Shift and select the values
Deselect an Other item	Click Other, and then delete the associated value (and its carriage returns) in the dialog box
Edit a value list	Click Edit, and then make any changes to the values in the Display Values for <*value list*> dialog box





? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ entering data

Viewing and inserting data from another source

To maintain consistency across records, you can do the following:

- View values in the index (when a field is indexed), which contains all the values in the currently selected field and insert them into the current field.
- Insert the current date, time, or user name.

Working with the index

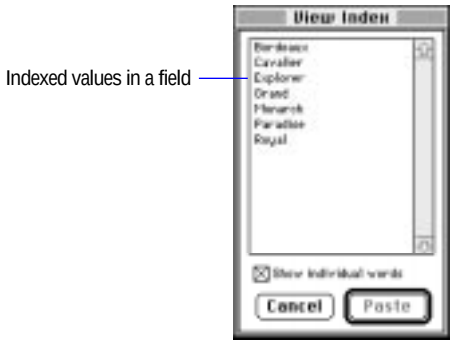
When you have field values indexed (by selecting storage options in the Entry Options dialog box), FileMaker Pro indexes the values in each text, number, date, time, and calculation field. You can view the values in a field's index, and insert them into the field to prevent typing duplicate values incorrectly. (To index fields, see "To change the number of repetitions visible on a layout, see "Formatting repeating fields" on page 3-72.Indexing fields" on page 2-13.)

Note Inserting values from the index is useful in Find mode. In Browse mode, prevent errors by creating a value list and inserting values from the list into the currently selected field instead of pasting values from the index. (See "Defining value lists" on page 3-75.)

1. Select the field to hold a value from the index.

   To replace the current field value, select the data to replace. To select the entire contents of the field, choose Select All from the Edit menu.

2. Choose Paste Special from the Edit menu, and then choose From Index.
3. In the View Index dialog box, to view each word instead of each value, select Show individual words.
4. Double-click a value to paste.



Note In a text field, the first 60 characters of the text are pasted..

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- index

Inserting the current date, time, or user name

You can insert the current date, time, or user name into a field in Browse mode or into fields in a find request. Insert the current date into a date, number, or text field. Insert the current time into a time, number, or text field. Insert the current user name into a text or number field.

1. Select the field to insert information into.
2. Choose Paste Special from the Edit menu, and then choose Current Date, Current Time, or Current User Name.

Keep these points in mind:

- After you insert the current date or time into a field, that value doesn't change. To display the current date or time, place a date or time symbol on the layout. See "Displaying special information" on page 3-83.
- You can use a script to insert information into a find request (for example, have a script enter the current user name to find all records specific to the current user). For more information, see "Displaying customized layouts" on page 5-32.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ entering data

Copying and moving values and records

You can copy values from any field type, including fields that are formatted as radio buttons, checkboxes, pop-up lists, and pop-up menus.

To	Do this
Copy or move a value from one field to another	Select the field contents and choose Copy or Cut from the Edit menu. Select the field to hold the data, and then choose Paste from the Edit menu
Copy or move a value from a field in one record to a field in another	Select the field contents and choose Copy or Cut from the Edit menu. Display the other record (see "Moving through records" on page 4-19). Select the field to hold the data, and then choose Paste from the Edit menu
Copy a value from the last record you modified	Select the field to hold the data. Choose Paste Special from the Edit menu, and then choose From Last Record
Copy values in a record to another application, like word processing	With no field selected, choose Copy from the Edit menu. In the other application, paste the record that's in the Clipboard
Copy the found set of records	See "Copying the found set" on page 4-30.
Duplicate data from another record in the current record	See "Adding and duplicating records" on page 4-3.

Keep these points in mind:

- You can also drag and drop information between fields, records, and applications. See "Using drag and drop to move information" on page 4-14.
- When you paste data into a field formatted as radio buttons, checkboxes, or a pop-up list or menu, the appropriate value is selected, replacing the entire contents of the currently selected field. When you paste a value that's not in the field's value list, the Other value is selected, if applicable.
- When you copy a record, everything is copied except data in container fields (including calculations with container results and global fields of container type). Text fields are copied in tab-delimited format, without styles, in the order they were created in the file.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- copying data
- deleting data
- pasting

Using drag and drop to move information

You can use *drag and drop* to transfer information to or from FileMaker Pro and other applications that are drag-and-drop capable without using the Clipboard.

To use drag and drop, you need System 7.5 or later, or System 7.0 with the Apple Drag Manager.

You can use drag and drop in Browse mode, Layout mode, and Find mode. In Layout mode, use drag and drop to transfer graphics or text. In Browse mode, use drag and drop to transfer text, or the contents of a container field, to another field. You can use drag and drop between FileMaker Pro and other applications. Each application you're using must support the type of data you're transferring (for example, you can't transfer a graphic into a text field).

1. Be sure both applications are open and visible on the screen in Browse, Layout, or Find mode.

2. Drag an object from one application to the other.

   You see an outline of the object you're dragging while you hold the mouse button down. If the other application can accept the object, the destination area (for example, a field) is highlighted.

Keep these points in mind:

- To disable drag and drop for text in fields, deselect Enable drag and drop text selection in the General area of the Preferences dialog box. See "Setting general application preferences" on page 9-2.
- You can't use drag and drop with more than one object at a time into FileMaker Pro.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ drag and drop

Replacing field values

You can replace the contents of a field in all or some records with a different value (for example, replace the value Production Artist with Production Specialist), a new series of serial numbers (when, for example, records have become disordered), or an expression. You can also modify a field's existing values by using an expression that includes the field (for example, change the value Gross Pay to the expression Gross Pay + 1000).

Before you begin, keep these points in mind:

- You can't replace calculation, summary, or global fields.
- You can't reserialize calculation, summary, global, or container fields.
- You may want to sort records before you reserialize them. For example, sort suppliers by how frequently you use them, and then reserialize the records. (See "Finding information" on page 4-20, "Omitting records" on page 4-27, and "Sorting records" on page 4-31.)
- To replace data in fields in only a few records, go to each record and change the value by selecting the contents of the field and then typing the information you want.

Important You can't undo replacing field values. Before you begin, consider making a copy of the file.

To replace field values:

1. In Find mode, find the records whose data you want to replace.
2. If you want the data in a specific order, in Browse mode, sort the records.
3. In Browse mode, in the current record, select the contents of the field whose values you want to replace.
4. If you're replacing data (not assigning serial numbers), type the value to replace the current data with.
5. Choose Replace from the Mode menu.
6. In the Replace dialog box, choose how to replace field values.

To replace each field with	Select
The value in the currently selected field	Replace with *<value>*. FileMaker Pro replaces the contents of the field for the entire found set
A serial number	Replace with serial numbers. Then type the starting value for the serial numbers and how much to increment each number by. (FileMaker Pro enters serial numbers starting with the first record in the found set) If you chose to automatically enter a serial number when you defined the field, you can update the next serial number value in the Entry Options dialog box by selecting Update serial number in Entry Options? in the Replace dialog box
An expression you specify	Replace with calculated result, and then click Specify. In the Specify Calculation dialog box, define the expression. (See "Writing formulas for calculation fields" on page 2-21.) The expression result must match the field type of the replaced field

Select how to replace field values

Replace
Permanently replace the contents of the field "Invoice number" in the 4 records of the current found set?
Replace with: "53847"
Replace with serial numbers:
Initial value: 04848
Increment by: 1
Update serial number in Entry Options?
Specify...
Replace
Cancel

7. Click Replace.

Note If the field that contains the replaced data is validated, FileMaker Pro doesn't validate the new data. (See "Choosing data entry options" on page 2-7.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ values

Working with records

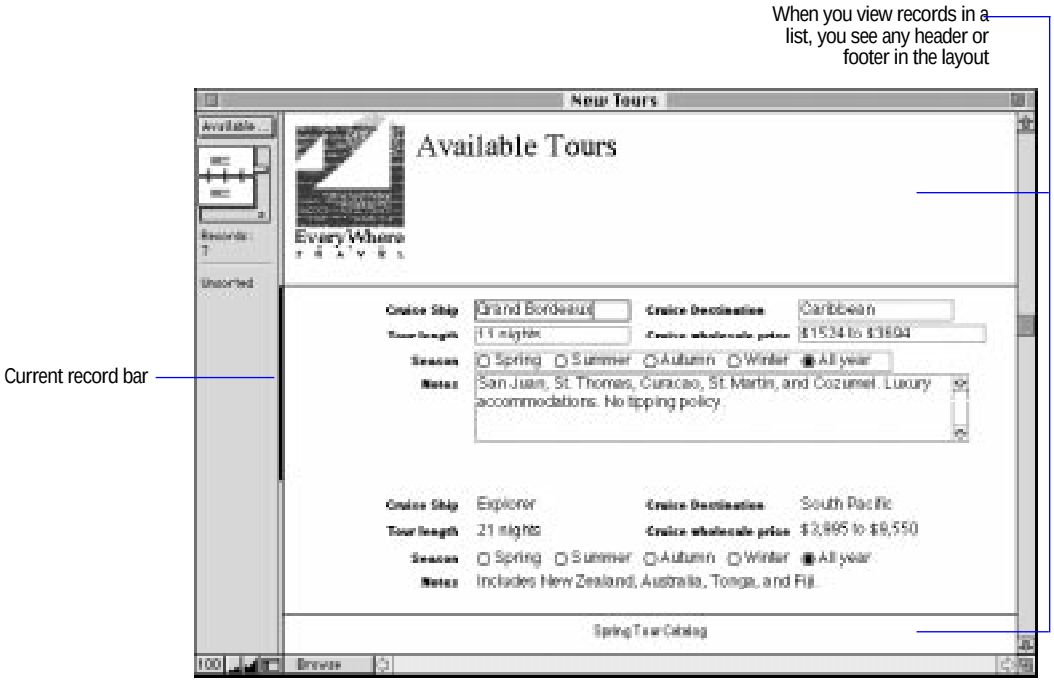
After you add data to records, you can work with them in various ways, as described in the following sections.

Browsing records

View records individually or as a list. When you're browsing individual records, the current record is the one you're viewing. When you're browsing records in a list, you see as many records as fit on one screen. In a list, the current record is marked with a solid bar along the left side.

- To browse individual records, choose Browse from the Mode menu. (Be sure View as Form in the Select menu is chosen.)

- To browse records in a list, choose Browse from the Mode menu, and then choose View as List from the Select menu. To work with a particular record, click anywhere in the record to make it the current record.


When you view records in a list, you see any header or footer in the layout
Current record bar
New Tours
Available Tours
EveryWhere
Grand Bordeaux
Caribbean
11 nights
$1534 to $3694
Spring Summer Autumn Winter All year
San Juan, St. Thomas, Curacao, St. Martin, and Cozumel. Luxury accommodations. No tipping policy.
Explorer
South Pacific
21 nights
$3,895 to $8,550
Spring Summer Autumn Winter All year
Includes New Zealand, Australia, Tonga, and Fiji.
Spring Tour Catalog
Browse

Note You can also prepare a Columnar report layout to show records in a list. See "Using Columnar report and Extended columnar layouts" on page 3-9.

Opening a URL

If you have a valid URL (Web address) in a field, you can click on the address, automatically open your Web browser, and go to the URL.

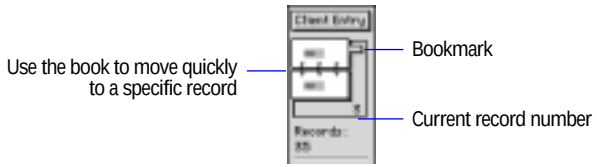
To open a URL from a field:

1. Press and hold the Command key, and then click any part of the URL.
2. Choose Open <URL> from the context menu.

Note This feature requires the Internet Config 1.1 system extension. For information on installing this extension, see your Mac OS documentation.

Moving through records

To move from one record to another, use keyboard commands or the book in the status area. When you browse individual records, FileMaker Pro displays the number of the current record in the lower-right corner of the book. When you browse records in a list, the current record is also identified by a solid bar to its left.



To move	Do this
One record at a time forward	Click the bottom page of the book
One record at a time backward	Click the top page of the book
Quickly to a specific record	Click the record number at the bottom of the book, type the record number you want, and then press Return. (Or press Esc, type the record number, and then press Return)
Quickly through records	Drag the bookmark down or up to move forward or backward to a specific record
Record by record through the list	Use the scroll bar to view records, and then select the record you want to work with
To a record with a unique value that you know	See the next section, “Finding information.”

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ records, overview

Finding information

You find specific records using Find mode. In Find mode, you can get a subset of the records in a file (called the *found set*) to do the following:

- Get specific information based on the data in text, number, date, time, and calculation fields.
- View, edit, perform functions on, calculate summaries for, sort, print, delete, export, or copy the found set to a different file.
- Find records that contain errors like empty fields, duplicate values, invalid dates or times, or mistakes you might notice (like misspellings) while viewing the index.
- Further reduce the found set by omitting records from it.

To find records, you type *criteria* (the value or values to find) into fields in a *find request*, which looks like a blank record. FileMaker Pro searches through all the records to compare the criteria with the data in the file. Records whose fields match the criteria are added to the found set, and the found set becomes the records being browsed.

Find requests can be as simple or complex as required, from a single request for a name in a field to multiple requests using operators and omissions.

Defining find requests

1. Choose the layout to use for finding records.

   The layout must include each field you plan to enter criteria into.

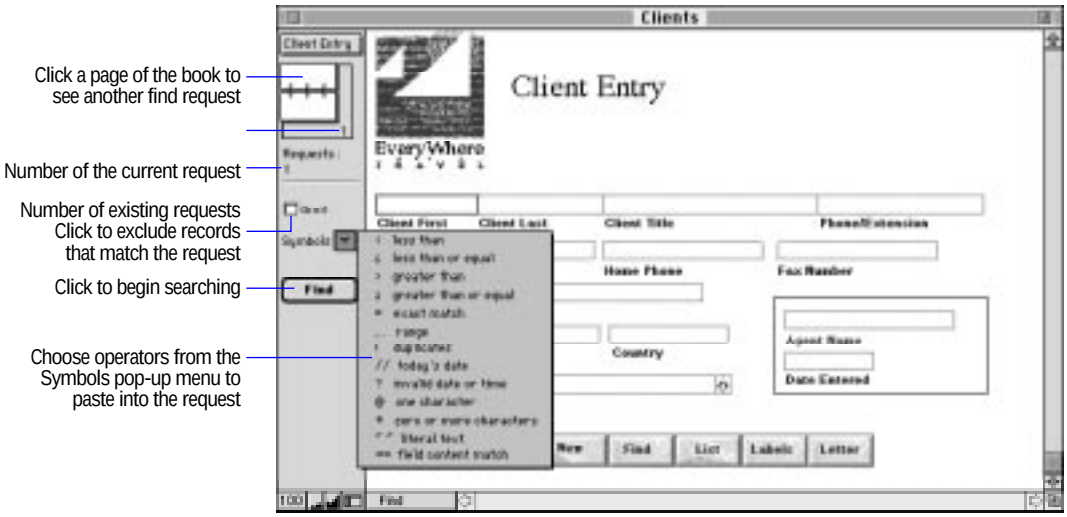
2. Choose Find from the Mode menu.
3. In the find request, select the field to use for finding, and then type values in the field.

   You can combine values you type with operators from the Symbols pop-up menu.

You can't enter search criteria in container fields, summary fields, or global fields.

To find values that are	Use this operator	For example, enter this in the field
Less than the value to the right of the symbol	<	<40 <9/7/1998
Less than or equal to the value to the right of the symbol	≤ or <=	≤95129 ≤05:00:00
Greater than the value to the right of the symbol	>	>95129 >9/7/1998
Greater than or equal to the value to the right of the symbol	≥ or >=	≥100 ≥8:00
Exactly as you specify, although the field may contain other values (additional words, for example)	=	=John
Exactly as you specify, in the order you specify, and the field contains no other values	==	==John
Within the range you specify. A range is first to last character in the alphabet for text; least to greatest for numeric; and earliest to latest for date and time.	... (three periods) or … (ellipsis) or .. (two periods)	12:30...17:30 1/1/98..6/6/98
Duplicate values (for example, to examine duplicate records in a mailing list)	!	!
Today's date	//	//
Invalid dates, times, or calculated results	?	?
One unknown or variable text character	@	@on
Zero or more unknown or variable text characters	*	J*n
In fields (to find fields that contain values)	*	*
Literal text (text exactly as it appears, but regardless of uppercase or lowercase) in a text field	" "	" " ", Ltd."
Empty fields (for example, to find records of unfilled orders)	=	=

See the following sections for more information about search criteria.



4. Click Find in the status area, or choose Perform Find from the Select menu.

To cancel before searching is finished, press Command-period.

Keep these points in mind:

- To return the find request to the way it was before you began adding criteria, choose Revert Request from the Mode menu.
- Use the "=" operator when you want to find a value that is exactly as you specify—although the field could contain additional values. (`"=John"` could return "John," "John Smith," and "John Q. Public.") Use the "==" operator when you want to find exactly what you specify, in the order you specify (`"==John"` returns "John" only; `"==John Smith"` returns "John Smith" only, not "Smith John.")
- You can use the index (if the field's values are indexed) to insert values into a find request. See "Working with the index" on page 4-11.

- You cannot find duplicate values in unindexed fields. For more information, see “Indexing fields” on page 2-16.
- You can perform finds on related fields. See “Finding and omitting related records” on page 10-42.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ find requests, defining

Finding information in different field types

In specific field types, you can find:

- text that matches a word, phrase, or a string of characters in a text field or in a calculation field that produces a text result
- text characters that aren’t indexed (*literal text*)
- numbers in a number field or in a calculation field that produces a numeric result
- dates in a date field or in a calculation field that produces a date result
- times in a time field or in a calculation field that produces a time result

Note To find data in a container field, create a text or number field that describes or identifies the contents of the container field. Then find the value in the text or number field.

Finding text

To find this in a text field	Type this in the field	Example
Words that start with specific characters	The specific characters	`Chris Smith` finds Chris Smith, Chris Smithson, and Smith Christenson
A word that is part of a field's contents	An equal sign (=) before the word	`=John` finds John and John Smith (but not Johnson)
An exact word and nothing else	Two equal signs (==) before the word	`==John` finds John only `==John Smith` finds John Smith (but not Smith John)
Exact matches on several words in the same text field	An equal sign (=) before each word in the search criterion in that field	`=Chris =Smith` finds Chris Smith or Smith Chris (but not Christopher Smithwick)
Words that vary by one or more characters	One wildcard character (@) for each unknown character	`Gr@y` finds Gray and Grey
Words that vary by more than one character	The wildcard character (*) for all unknown characters	`McK*ie` finds McKechnie and McKenzie
Whole words of literal text (text exactly as it appears, but regardless of uppercase or lowercase)	Choose Literal text from the Symbols list. Type the text, including spaces and punctuation, surrounded by double quotation marks (`"`).	`"Marten and Jones Interiors"` finds Marten and Jones Interiors but not Jones and Marten Interiors
Partial words of literal text (text exactly as it appears, but regardless of uppercase or lowercase)	Choose Literal text from the Symbols list. Type characters, punctuation, and spaces exactly as they appear in the file, surrounded by double-quotation marks (`"`). Type the wildcard character (*) to find text in the middle of the literal text string.	`*"son & Phillips"` finds Johnson & Phillips and Paulson & Phillips `", "` finds Boston, MA and Markley Insurance, Inc.

Keep these points in mind:

- Searching for literal text takes longer than word searches. (See "To change the number of repetitions visible on a layout, see "Formatting repeating fields" on page 3-72.Indexing fields" on page 2-13.)
- You can omit records when you define one or multiple requests. See "Omitting records" on page 4-27.

Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ symbols

Finding numbers, dates, and times

To find	Type this in the field	Example
A number in a number field or calculation field that produces a numeric result	The number, in the format used when the file was created (unless Use System Formats is chosen)	`.50` finds .50, $.50, and 50%
A Boolean number in a number field or calculation field that produces a Boolean result	The value you're using for the field	`Y, y, t,` and `T` find Yes `1` finds 1 `F, f, n,` and `N` find False
A date in a date field or calculation field that produces a date result	The date as digits, separated by a nonnumeric character, in the format used when the file was created (unless Use System Formats is chosen)	`3/3/98` finds 3/3/98, March 3, 1998, and 3/3/1998
Today's date in a date field or calculation field that produces a date result	//	`//` finds April 4, 1998 (when the current date is 4/4/98)
A time in a time field or calculation field that produces a time result	The time as digits, separated by colons, in the format used when the file was created (unless Use System Formats is chosen)	`12:53:09` finds 12:53:09

Note For information about system formats, see appendix B, "Working with international files."

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- data, finding

Finding different sets of criteria

You can find all the records in a file (for example, after you've created a found set), find records that match more than one set of criteria (*logical AND search*), or find records that match either one set of criteria or another (*logical OR search*).

To find	Do this
All the records in a file	Choose Find All from the Select menu
A group of records that match a specific set of criteria	In one request, enter criteria into as many fields as needed to make your request specific (creating a logical AND search), and then click Find (or choose Perform Find from the Select menu). For example, type `Johnson` and `Personnel` to find all people named Johnson who work in Personnel
Records that match one criterion or another	Choose New Request from the Mode menu. (Or use the bookmark to display the request to duplicate, and then choose Duplicate Request from the Mode menu.) Enter or edit the criteria, continue adding new or modified requests for each set of criteria (creating a logical OR search), and then click Find (or choose Perform Find from the Select menu). For example, type `New York` in the first request and `Paris` in the second request to find all records that contain either New York or Paris

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ records, finding

Repeating, editing, and deleting find requests

You can repeat the most recent find request to find records that match the same criteria. If you add or delete records after defining the first request, the result is a different set of found records. You may also edit your requests before finding records again.

You can delete requests as long as you keep at least one.

To	Do this
Repeat a request	Switch to the layout you want. Choose Modify Last Find from the Select menu, and then click Find
Edit a request	Switch to the layout you want. Chose Modify Last Find from the Select menu, make changes to the request as needed, and then click Find (or choose Perform Find from the Select menu)
Delete a request	Choose Modify Last Find from the Select menu. Use the bookmark to display the request to delete, and then choose Delete Request from the Mode menu

Note Performing a find retrieves records from all the records in the file, not just from those previously found.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ copying records

Omitting records

When you don’t want to include all records in a particular group, you can *omit* the records to exclude, to make them temporarily unavailable. Omitting a record doesn’t remove it from the file; the record is removed only from the current found set. Omitted records aren’t included in summaries, and they aren’t sorted, printed, or exported to another file.

You can also mix requests to find some records and omit others. FileMaker Pro works through multiple requests in order, so you first define the criteria for finding records and then the criteria for omitting records.

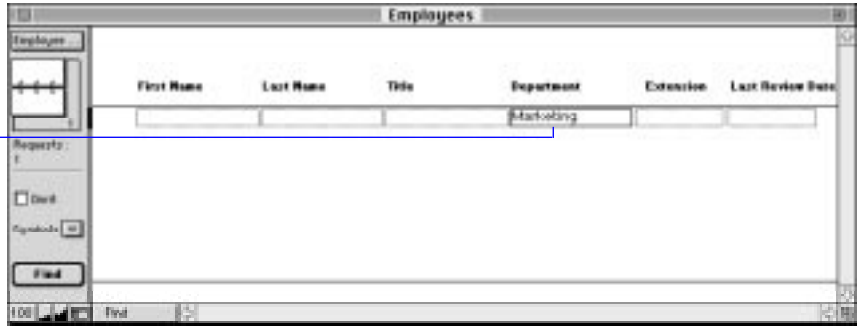
In addition, you can find records that don’t match the request. For example, to work with all the sales records except those for the city of London, you can specify London in the find request and then omit those records. It’s often easier to omit the records you *don’t* want than to search for all the records you *do* want.

To	Do this
Omit a specific record	Display or select the record to omit, and then choose Omit from the Select menu

To	Do this
Omit groups of records	Display or select the first record in a number of consecutive records to omit, and then choose Omit Multiple from the Select menu. In the Omit Multiple dialog box, type the number of records to omit, and then click Omit
Bring back all the records in the file	Choose Find All from the Select menu
Switch the found set with the omitted set	Choose Find Omitted from the Select menu
Find some records and omit others	In one request, type the criteria for finding the records. In a second request, click Omit, and then type the criteria to remove records from those found. Then click Find (or choose Perform Find from the Select menu).
Find records that don't match the request	In one request, type criteria for the records to omit. Click Omit, and then click Find (or choose Perform Find from the Select menu).

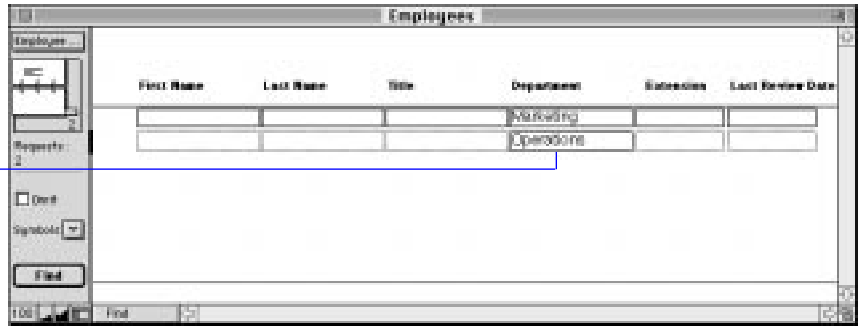
Note FileMaker Pro works through multiple requests in the order you specify, so define the omit requests last. Otherwise, subsequent find requests might include records that should be omitted.

The following example shows three find requests where one request omits a group of consecutive records. Together, these three find requests find all records of employees in Marketing and Operations and omit those whose title is Director.

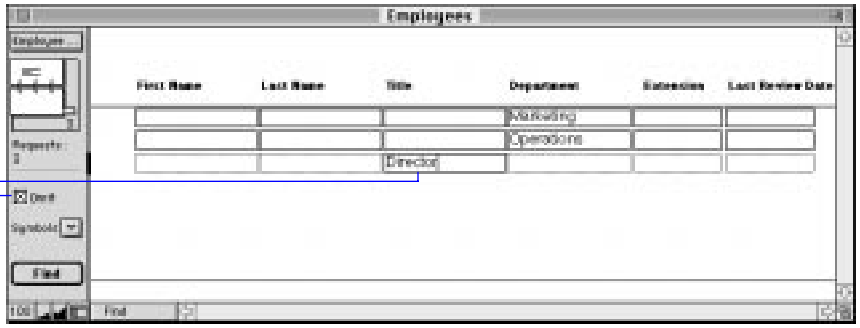


The first request finds all records where Department is Marketing, that is, all employees in Marketing

The second request finds all records where Department is Operations, that is, all employees in Operations



The third request omits records of employees whose title is Director



The found set

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- omitting records

Copying the found set

You can copy the found set to the Clipboard to paste the records into a different application, like a spreadsheet. Container fields aren't copied.

In Browse mode with no fields selected, press Option-Command-C. FileMaker Pro copies the data to the Clipboard in tab-delimited format (in fields, separated by tab characters), without text styles, in the order they were added to the file.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ copying records

Deleting records

You can delete an entire file of records, delete groups of records, or delete single records. When you delete a record, you *permanently* discard the data in all the fields in that record.

Important You can't retrieve deleted data, and you can't undo deleting records. Before you delete records, it's a good idea to make a backup copy of your file.

To delete	Do this
One record	Select the record to delete and choose Delete Record from the Mode menu. In the alert message, click Delete
A group of records	Use Find or Omit Multiple to select a subset of records to delete, and then choose Delete All from the Mode menu. In the alert message, click Delete
All records in a database	Choose Find All from the Select menu, and then choose Delete All from the Mode menu. (Or create a clone of the database with no records. See "Saving a copy of a file" on page 1-11.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ records, overview

Sorting records

FileMaker Pro stores records in the order they were added to the file. However, you often want to work with records in sorted order. Sorting temporarily rearranges all or a group of records (the found set) based on the entries in a field or set of fields, so you can browse, update, or print the records in a different sequence.

You sort records by selecting fields whose contents you want to sort by. The first sort field arranges the records based on the field's contents. The second sort field arranges records when two or more records have the same value in the first sort field, and so on. You can sort records in ascending order, descending order, or in a custom order based on a value list.

FileMaker Pro keeps the records in the sorted order until you perform a find or sort the records again.

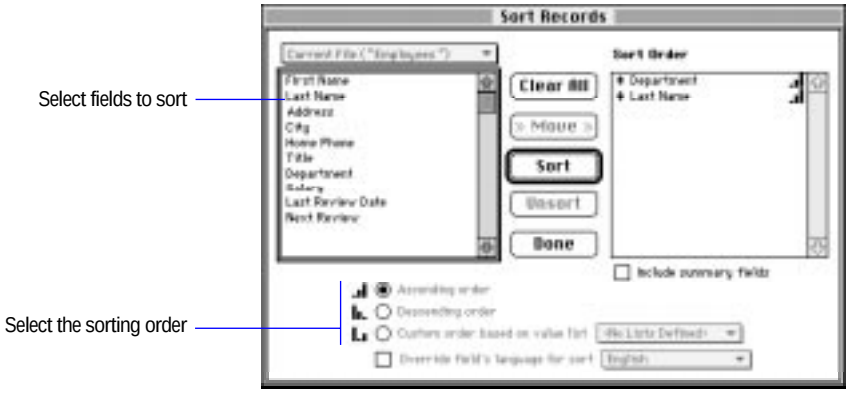
1. To sort some but not all of the records, find the records to sort.

   See "Finding information" on page 4-20.

2. Choose Sort from the Mode menu.

3. In the Sort Records dialog box, choose fields for sorting, in the order you want them sorted.

To	Do this
Choose a sort field and sort it according to the selected order	In the fields list, double-click a field
Assign different sort orders to fields as you add them to the Sort Order list	For each sort field, in the fields list, select a field, select a sort order, and then click Move Ascending order is first to last character in the alphabet for text, lowest to highest for numbers, and earliest to latest for dates and times. Descending order is last to first character in the alphabet for text, highest to lowest for numbers, and latest to earliest for dates and times
Change the sort order for fields in the Sort Order list	For Sort Order, select a field, and then select a sort order
Sort according to the order of values in a value list (for example, in the order months are arranged)	In the fields list, select a field, select Custom order based on value list, and then choose or define a value list. (See "Defining value lists" on page 3-75 and "Entering data from a value list" on page 4-10.)
Change the order of fields in the Sort Order list	For Sort Order, use the double-arrow (to the left of the field name) to drag the field to a new position
Remove a field from the Sort Order list	For Sort Order, double-click the field
Remove all fields from the Sort Order list	Click Clear All
Sort by summary fields	Select Include summary fields. (See "Sorting by summary fields" on page 4-34.)
Use a language for the order in which fields are sorted that's different from the one used for indexing	Select Override field's language for sort, and then choose a language
Close the Sort Records dialog box without sorting	Click Done



4. Click Sort.

To cancel before sorting is finished, press Command-period.

Keep these points in mind:

- To sort records that have container fields that you want in order, create a text or number field that describes or identifies the contents of the container field. Then sort by the text or number field.
- To restore records to the order in which they were added to the file, choose Sort from the Mode menu, and then click Unsort in the Sort Records dialog box.
- When you sort repeating fields, or related fields in portals, FileMaker Pro uses only the first value in the repeating or related fields to sort records. To sort records based on values other than the first value, make separate records for each repeating value.
- You can specify a sort order for related fields. If the match field in one record in a file relates to the match field in more than one record in a related file, you can specify that the related field in the first file display a sorted value (or several sorted values if the related field is in a portal displaying more than one row). For more information, “Sorting related data” on page 10-43.

- When you add a record to sorted records, FileMaker Pro tries to maintain the sort order. It adds new records to the end of the group the current record is in. For example, if you sort records by month and add a record where the month is June, FileMaker Pro adds the record to the end of the group of June records. The message in the status area changes to Semi-sorted to indicate the approximate order. When you finish adding records, resort them.
- To create a script with a sort order, define the sort order, and then click Done. Then define the script.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ sorting records

Sorting by summary fields

You can include a summary field in the sort order. For example, sort on a summary field named Monthly Sales Totals and on a field named Sales Region to show monthly sales totals for different sales regions. (To sort a summary field like Monthly Sales Totals, you must include a second nonsummary field like Sales Region or Salesperson.)

Keep these points in mind:

- Sorting by summary fields affects the order of printed or previewed records but doesn't change the order of records in Browse mode.
- A summary field selected for sorting is placed at the bottom of the Sort Order list. Summary fields can't be sorted in a custom sort order.
- If data is already sorted appropriately for the summary report, you don't have to re-sort when you add or remove summary fields in the sort order. Add the summary field as described in the previous section, and then click Done (not Sort).

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ summary fields

Chapter 5: Using ScriptMaker and buttons

FileMaker Pro includes ScriptMaker software, which you can use to automate tasks like:

- switching to another layout or mode
- finding, sorting, and printing records
- dialing phone numbers

This chapter tells you how to use ScriptMaker and how to define buttons to perform script commands.

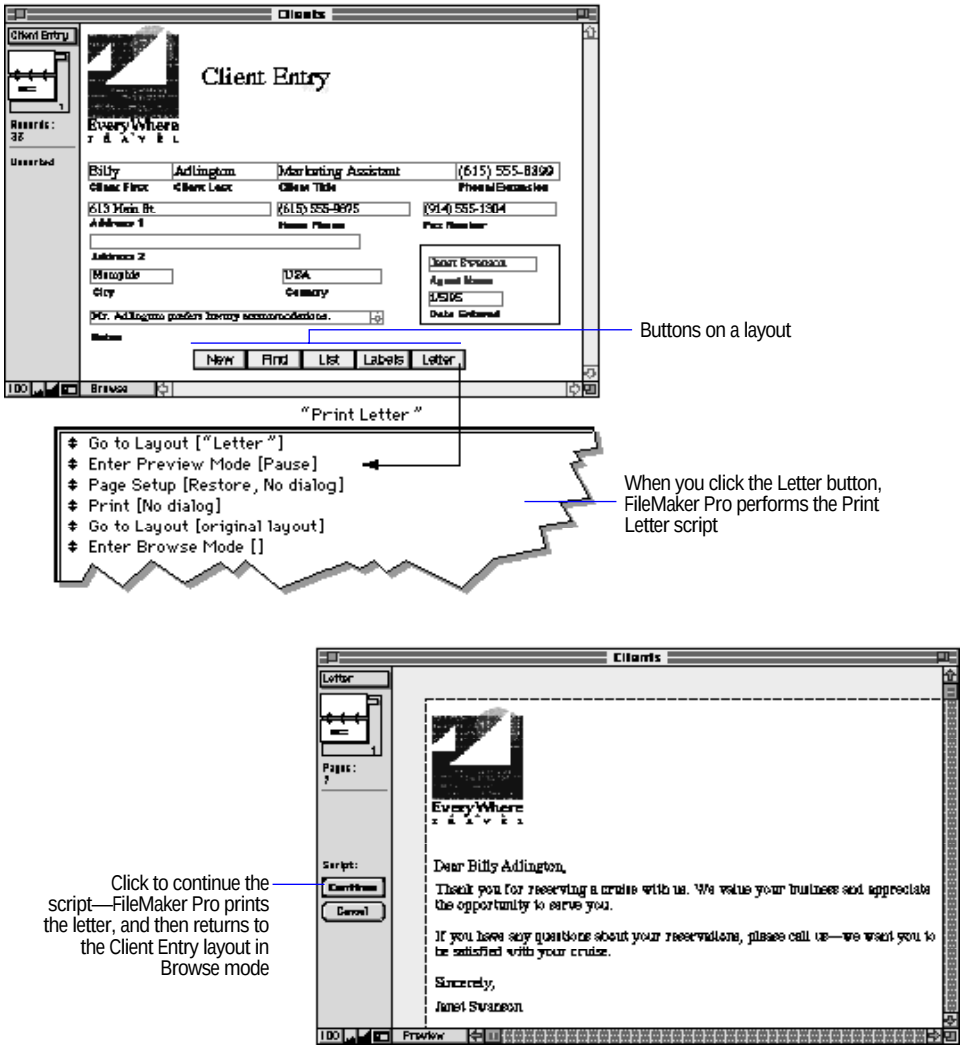
Note FileMaker Pro scripts are not available when you publish a database on the Web using FileMaker Pro Web Companion Instant Web Publishing.

Important Before you read this chapter, be sure you know how to work with FileMaker Pro, as explained in the rest of this guide. You should also know how to use FileMaker Pro Help, as explained in the preface, “Getting help.”

Understanding scripts

A *script* is a command that tells FileMaker Pro to carry out one action or a sequence of actions. You *perform* a script to carry out its actions.

For example, when you click the Letter button on the Client Entry layout, a script displays the Letter layout. Then the script switches to Preview mode and pauses so you can see what the letter looks like when it prints.



Scripts help you do a job the same way every time. They carry out simple steps, like changing the printing orientation for envelopes, or complex tasks, like preparing a large mailing.

You can perform additional scripts, called *subscripts*, within a script. Subscripts make it easy to break a complex task into small tasks. For example, you can find customers with a balance due with one script, and then print form letters requesting payment with another script. The first script contains a command that performs the second script (the subscript). If a subscript is in a different file, it's called an *external script.*

With FileMaker Pro, you can:

- define a script that pauses to let you do unscripted tasks, like entering data. When you resume the script, FileMaker Pro performs the remaining script commands.
- save settings, like find requests and sort orders, in a script.
- print the commands and settings that make up a script. (See chapter 6, "Previewing and printing information.")
- define passwords that prevent other users from defining or changing scripts. (See "Protecting your files" on page 7-9.)
- perform a *startup script*, a script that runs when you open a FileMaker Pro file. For example, a startup script can switch to a data entry layout whenever you open a customer order database. FileMaker Pro can also perform a *shutdown script* every time you close a file. (See "Setting document preferences" on page 9-7.)
- send Internet mail using a separate email client (this requires an email account).
- launch Web browser software and have it display a specified URL (Web address—this requires an account with an Internet service provider).

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ scripts, overview

Understanding ScriptMaker steps

A *step* is a FileMaker Pro command that you use in a script. Steps are similar to the commands you access through FileMaker Pro menus. For example, you can create a record by choosing New Record from the Mode menu, or you can perform a script that contains the New Record/Request step.

Keep these points in mind:

- Many steps have options that you specify when you define a script. For example, you can specify a field name in the Go to Field step. FileMaker Pro Help contains detailed information about steps and options.
- Some steps, like Paste, can only be performed in certain modes or when a specified field is on the current layout.
- Some steps can display a dialog box when you perform a script. For example, a script with the Sort step can display the Sort dialog box so you can enter a sort order.
- You can use status functions in steps to monitor the state of your database. For example, a script can check whether a file is sorted. Or it can display a customized message that tells users what to do when a found set is empty.

  For a list of status functions, see "Status functions" on page C-16. For examples using status functions, see "Displaying customized layouts" on page 5-32 and FileMaker Pro Help.
- For information about using script steps with related fields, see "Working with related fields" on page 10-30.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- script steps
- status functions

Control steps

Use this step	To
Perform Script	Perform another script
Pause/Resume Script	Pause a script, or resume a paused script
Exit Script	Exit the current script
Halt Script	Stop performing all scripts
If	Perform steps if a calculation is True (not zero)
Else	Perform another set of steps if a calculation is False (zero)
End If	Mark the end of an If statement
Loop	Repeatedly perform a set of steps
Exit Loop If	Exit a loop if a calculation is True (not zero)
End Loop	Mark the end of a loop
Allow User Abort	Allow or prevent users from stopping a script
Set Error Capture	Allow or prevent error messages from displaying. Use this step to change the way FileMaker Pro handles error messages

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ control script steps

Navigation steps

Use this step	To
Go to Layout	View the specified layout
Go to Record/Request/Page	Move to a record in the found set in Browse mode, a find request in Find mode, or a page in Preview mode
Go to Related Record	Move to the current related record in a related file
Go to Portal Row	Move to a portal row, or to a specified field in a portal row
Go to Field	Move to a field on the current layout
Go to Next Field	Move to the next field on the current layout
Go to Previous Field	Move to the previous field on the current layout
Enter Browse Mode	Switch to Browse mode

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ navigation script steps

Sort, find, and print steps

Use this step	To
Sort	Order records in the found set
Unsort	Restore records to the order in which they were created
Find All	Find all records in the file
Find Omitted	Find records that aren't in the found set
Omit	Leave the current record out of the found set
Omit Multiple	Leave a number of records, starting from the current record, out of the found set
Perform Find	Find records that match the current find request(s)
Modify Last Find	Change the last find request(s)
Page Setup	Set Page Setup options for printing, like horizontal or vertical orientation
Print	Print information from the current file

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ sort/find/print script steps

Editing steps

Use this step	To
Undo	Undo the last action
Cut	Delete the contents of a field and put them in the Clipboard
Copy	Copy the contents of a field, or a page in Preview mode, to the Clipboard
Paste	Paste the contents of the Clipboard into a field
Clear	Delete the contents of a field without copying the contents to the Clipboard
Select All	Select the entire contents of a field

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- editing script steps

Fields steps

Use this step	To
Set Field	Replace the contents of a field with the result of a calculation. The field doesn't have to be on the current layout
Paste Literal	Paste a text string into a field
Paste Result	Paste the results of a calculation into another field on the current layout
Paste from Index	Paste a value from the index into a field
Paste from Last Record	Paste data from a field in the last active record into the same field in the current record or find request. (The last record to contain an insertion point in a field is the *active record*)
Paste Current Date	Paste the current system date into a field
Paste Current Time	Paste the current system time into a field
Paste Current User Name	Paste the name of the current user into a field. (The current user name is specified in the general preferences)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- fields script steps

Records steps

Use this step	To
New Record/Request	Add a record or find request
Duplicate Record/Request	Duplicate a record or find request
Delete Record/Request	Permanently delete the current record or find request
Delete Portal Row	Permanently delete the current portal row. Use *Go to Portal Row* to specify which is the current row
Revert Record/Request	Return the current record or find request to the way it was before you added or changed its data
Exit Record/Request	Exit the current record or find request to update the field data and make no field active
Copy Record	Copy the contents of the current record to the Clipboard
Copy All Records	Copy the contents of the found set to the Clipboard
Delete All Records	Permanently delete all records in the current found set
Replace	Change the contents of a field in all records in the found set
Relookup	Update a lookup value in records in the found set

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ records script steps

Import and export steps

Use this step	To
Import Picture	Import a graphic into the current field
Import Movie	Import a QuickTime movie into the current field
Import Records	Bring data from another file into the current file
Export Records	Save data in a format you can open in another application

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ import and export script steps

Windows steps

Use this step	To
Freeze Window	Stop updating the window (hide actions from users)
Refresh Window	Redraw the screen, or resume updating after Freeze Window
Scroll Window	Scroll the window up, down, or to the current selection
Toggle Window	Hide or change the size of the window
Toggle Status Area	Show, hide, or lock the status area
Toggle Text Ruler	Show or hide the text ruler
Set Zoom Level	Reduce, enlarge, or lock the contents of a window
View As	View records individually or in a list

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ windows script steps

Files steps

Use this step	To
New	Create a file
Open	Open a file. Subsequent steps operate in the file that contains the script, not the file just opened
Close	Close a file
Change Password	Modify an existing password
Set Multi-User	Turn network access On or Off for the current file
Set Use System Formats	Use date, time, and number formats saved with the current file, or use the system formats
Save a Copy as	Save a copy of the current file
Recover	Recover a file

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ files script steps

Spelling steps

Use this step	To
Check Selection	Check the spelling of text in the selected field
Check Record	Check the spelling of text in the current record
Check Found Set	Check the spelling of all fields in all records in the found set
Correct Word	Display Spelling dialog box so you can correct a misspelled word. Spell check as you type (in the Spelling area of the Document preferences) must be on
Spelling Options	Display the Spelling Options dialog box
Select Dictionaries	Display the Select Dictionaries dialog box
Edit User Dictionary	Display the Edit User Dictionary dialog box

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ spelling script steps

Open Menu Item steps

Use this step	To
Open Application Preferences	Display the Application Preferences dialog box
Open Document Preferences	Display the Document Preferences dialog box
Open Define Fields	Display the Define Fields dialog box
Open Define Relationships	Display the Define Relationships dialog box
Open Define Value Lists	Display the Define Value Lists dialog box
Open Help	Display the FileMaker Pro Help system contents window
Open ScriptMaker	Display the Define Scripts dialog box. FileMaker Pro stops performing a script after this step
Open Sharing	Display the File Sharing dialog box

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ open menu item steps

Miscellaneous steps

Use this step	To
Show Message	Display an alert message
Beep	Play the system beep sound
Speak	Produce speech from text
Dial Phone	Dial phone numbers
Open URL	Launch a Web browser and display a URL
Send Mail	Send email with the To, Cc, Subject, and Message fields as specified in script step options
Send Apple Event	Send an Apple event to another application
Perform AppleScript	Perform AppleScript commands
Comment	Add notes to a script to describe a step
Flush Cache to Disk	Save the FileMaker Pro internal cache to disk
Quit Application	Close all files and quit FileMaker Pro

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- miscellaneous script steps

Planning scripts

Consider these points before defining a script:

- What do you want to accomplish? Can you separate the job into smaller tasks? If so, define a subscript for each small task, and then define a script that performs the subscripts. It's usually easier to design and test several small subscripts than one complex script.
- Is all the data you need in one file, or will the script operate on more than one file? If you're using multiple files, which ones should the script open? Where should you define the script?
- How will users perform the script? (See "Performing, resuming, or stopping scripts" on page 5-19.)
- Will the script contain steps for page setup, printing, importing, finding, sorting, or exporting? If so, what settings should you store before defining the script? (See "Storing settings for a script" on page 5-15.)

- Which fields and layouts will the script need? Some steps require a field to be on the current layout (like Go to Field, Paste Literal, Paste Result, and Replace), while others don't (Set Field). Use Go to Layout to switch to a layout that has the fields your script requires.
- Should the script switch among modes? For example, use Enter Browse Mode before modifying data in fields and records, and use Enter Find Mode before setting up a find request or finding data.
- Should the script work on all records in the database, the current found set, or a specific set of records? What if no records are found? Use one of the find or omit steps to set up the correct records.
- Which record should the script start with? For example, when using the Loop step, decide whether the loop starts at the first or last record, a specific record, or the current record in a found set. Use Go to Record/Request/Page to select a starting record.
- How should the script advance through multiple fields and records? Use navigation steps to move through a found set.
- Should the records be sorted before the script processes them? If you use the Loop step, use Sort or Unsort before the loop to order your records properly.
- When should the script finish? After all records have been processed? After a specified condition has been met? Use the If step to perform a task when the script reaches a specified condition.
- How will you document your script design? Use the Comment step to make your scripts readable and understandable.
- How will you test your script? Use the Pause/Resume Script step to pause at specific points in your script.

  Tip Save a clone (or copy) of your database, and then define and test your script in it to preserve the original data. After testing the script, import data from the original file into the clone.

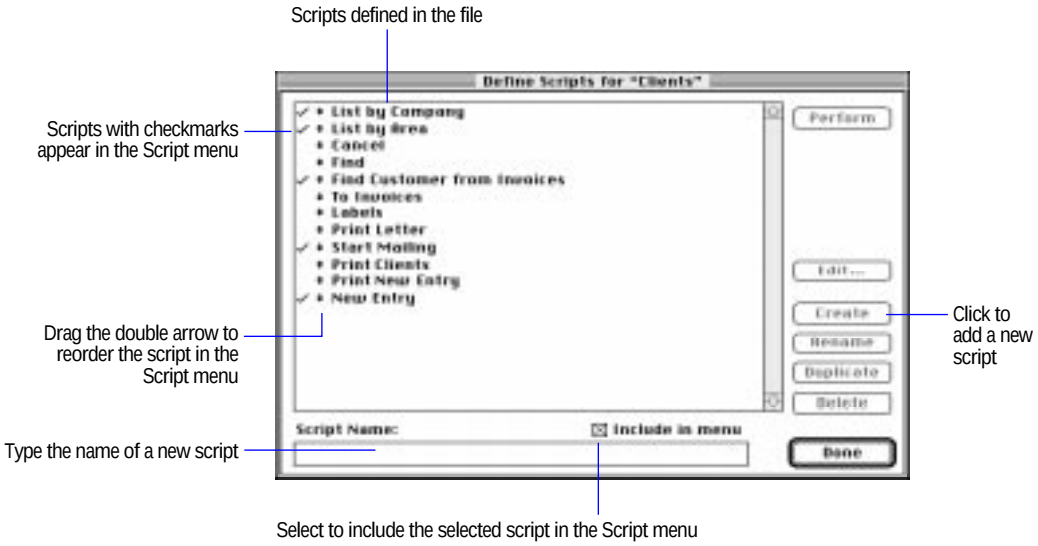
Defining scripts

Define scripts in ScriptMaker by choosing steps and arranging them in the order you want FileMaker Pro to perform them. If you're using a subscript, define it first, and then define the script that calls (uses) it.

1. If you're defining a script to print, import, export, find, or sort, first store the settings for the script.

   See "Storing settings for a script" on page 5-15.

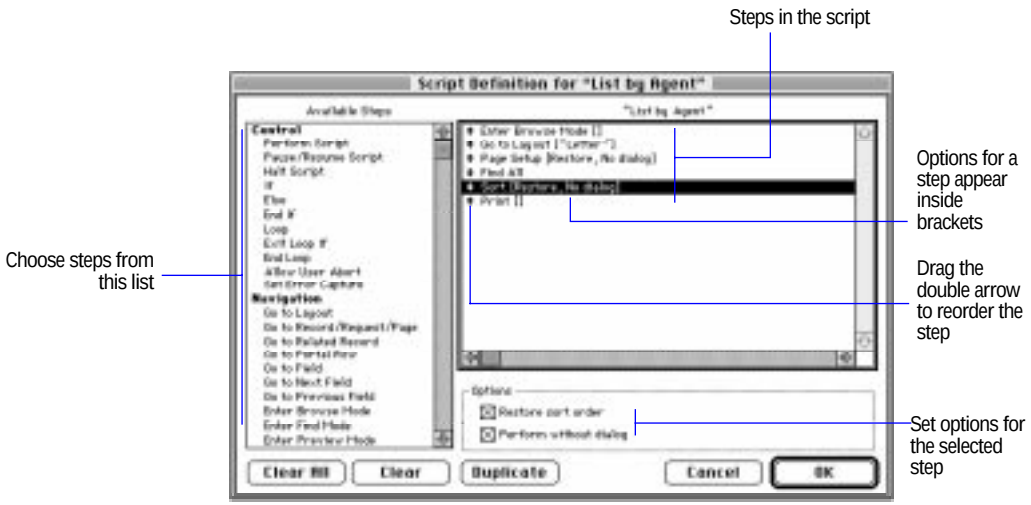
2. Choose ScriptMaker from the Script menu.
3. In the Define Scripts dialog box, type the name of the new script, and then click Create.



4. In the Script Definition dialog box, choose steps for the script.

FileMaker Pro includes preset steps when you create a script. You can change or delete the steps.

To	Do this
Add a step	Select the step in the Available Steps list, and then click Move. Select options for the step, if they're available
Delete a step	Select a step in the script, and then click Clear
Delete all steps	Click Clear All
Duplicate a step	Select a step in the script, and then click Duplicate
Change step options	Select a step in the script, and then change the options
Change the order of a step	Drag the double arrow to move the step
Add a subscript	Select Perform Script in the Available Steps list, and then click Move. Select the Perform sub-scripts option, and then choose the subscript from the pop-up menu. Choose External Script if the subscript is in a different file
Add a pause in the script	Select Pause/Resume Script in the Available Steps list, click Move, and then specify the options. Or add a step with the Pause option and set the option



5. Click OK.
6. To list the script in the Script menu, select Include in menu in the Define Scripts dialog box.

7. Click Done.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ scripts, defining

Storing settings for a script

When you define a script, FileMaker Pro saves the current settings for page setup, importing, finding, sorting, and exporting. FileMaker Pro can restore the settings when you perform the script.

To store settings for a script, specify them before adding Page Setup, Print, Import Records, Perform Find, Sort, or Export Records steps to a script.

To specify	Do this
Page setup options	Choose Page Setup from the File menu. Select the settings you want, and then click OK. For information about the options, see the manual that came with your printer
Print options	Choose Print from the File menu. Select the settings you want, and then click Print. FileMaker Pro saves most print settings, including the number of copies and the type of information to print (like Records being browsed). See “ Printing” on page 6-12.
Import order	Import records using the field order you want to store. See “Importing data into an existing file” on page 8-4.
Find requests	In Find mode, create the find requests. You don’t have to click Find to perform the requests. See “Defining find requests” on page 4-20.
Sort order	In Browse mode, choose Sort from the Mode menu, and then choose the fields you want to sort by and the sort order. Click Done. See “Sorting records” on page 4-31.
Export order	Export records using the field order you want to save. See “Exporting data from FileMaker Pro” on page 8-9.

Keep these points in mind:

- To use the settings when you perform the script, select the Restore option for Page Setup, Import Records, Perform Find, Sort, or Export Records steps.
- A script can store only one of each type of setting, for example, one set of find requests and one sort order. If you need more than one, define a subscript that stores different settings. See “Defining scripts” on page 5-12.

- To see the settings you stored with a script, print the script definition. See chapter 6, "Previewing and printing information."
- You can enter settings when you perform a script instead of using stored settings. FileMaker Pro doesn't save the settings you enter when you perform the script.

  For example, if you add a Sort step and deselect the Restore sort order and Perform without dialog options, the Sort dialog box appears when you perform the script. If you select Restore sort order and deselect Perform without dialog, the dialog box displays default settings that the user can perform or modify.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ scripts, managing

Changing and duplicating scripts

1. Change the settings stored for the script, if necessary.

   See "Storing settings for a script" on page 5-15.
2. Choose ScriptMaker from the Script menu.
3. In the Define Scripts dialog box, select a script name.

To	Do this
Quickly create a similar script	Click Duplicate
Change the name of the script	Edit the name in the Script Name box, and then click Rename
Add the script to the Script menu	Select Include in menu
Remove the script from the Script menu	Deselect Include in menu

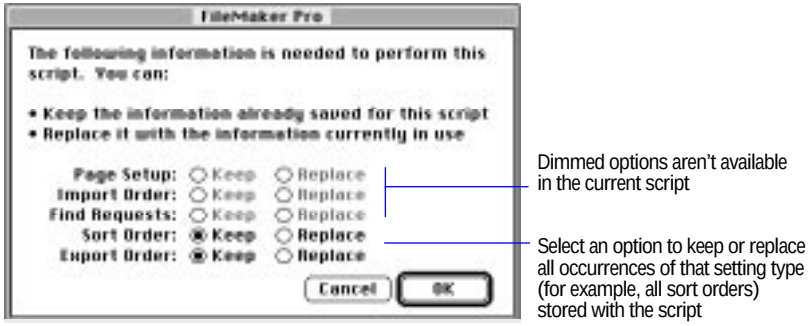
4. Click Done to finish, or click Edit to change the steps in the script.

5. In the Script Definition dialog box, change the script steps, and then click OK.

To	Do this
Add a step	Select the step in the Available Steps list, and then click Move. Select options for the step, if they're available
Delete a step	Select a step in the script, and then click Clear
Change step options	Select a step in the script, and then change the options
Change the order of steps	Drag the double arrow to move a step

Note If you're changing a script that was created with FileMaker Pro for Windows, steps that work only in Windows are displayed in italics. You can't change the options for these steps.

6. If you see the Script Settings dialog box, specify whether to keep or replace the settings you previously stored with the script, and then click OK.


FileMaker Pro
The following information is needed to perform this script. You can:
• Keep the information already saved for this script
• Replace it with the information currently in use
Page Setup: Keep Replace
Import Order: Keep Replace
Find Requests: Keep Replace
Sort Order: Keep Replace
Export Order: Keep Replace
Cancel
OK
Dimmed options aren't available in the current script
Select an option to keep or replace all occurrences of that setting type (for example, all sort orders) stored with the script

7. Click Done.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- scripts, changing
- scripts, creating

Reordering scripts in the Script menu

FileMaker Pro lists scripts in the Script menu and assigns keyboard shortcuts (like Command-1) to the first ten.

1. Choose ScriptMaker from the Script menu.
2. In the Define Scripts dialog box, drag the double arrow to the left of the script name to a new position.
3. To add or delete a script from the menu, select the script, and then select or deselect Include in menu.

   Scripts with checkmarks appear in the Script menu.
4. Click Done.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ scripts, managing

Deleting scripts

1. Choose ScriptMaker from the Script menu.
2. In the Define Scripts dialog box, select the name of the script, and then click Delete.
3. Click Delete again, and then click Done.

Important When you delete a script, change scripts and buttons that refer to the deleted script.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ scripts, managing

Performing, resuming, or stopping scripts

To	Do this
Perform a script from the Script menu	Choose the script name from the Script menu
Perform a script from the Define Scripts dialog box	Choose ScriptMaker from the Script menu. Select the script name, and then click Perform
Perform a script using a keyboard shortcut	Type the keyboard shortcut. (See “Reordering scripts in the Script menu” on page 5-18.)
Perform a script from a button	Switch to a layout that contains a button for the script. In Browse or Find mode, click the button
Perform a script when opening or closing a FileMaker Pro file	In the Preferences dialog box, set the option to perform a startup or shutdown script. See “Setting document preferences” on page 9-7.
Continue a script after it pauses	Click Continue in the status area, or press Return. If you switch layouts while a script is paused and then continue the script, remaining script steps occur in the new layout
Stop a paused script	Click Cancel in the status area, switch to another mode, close the active window, or quit FileMaker Pro
Stop a script (except when it is paused)	Press Command-period, hide or close the active window, or quit FileMaker Pro. If the script contains a Close or Toggle Window step that hides the active window, FileMaker Pro stops the current script and returns to the script that called it (if there is one)

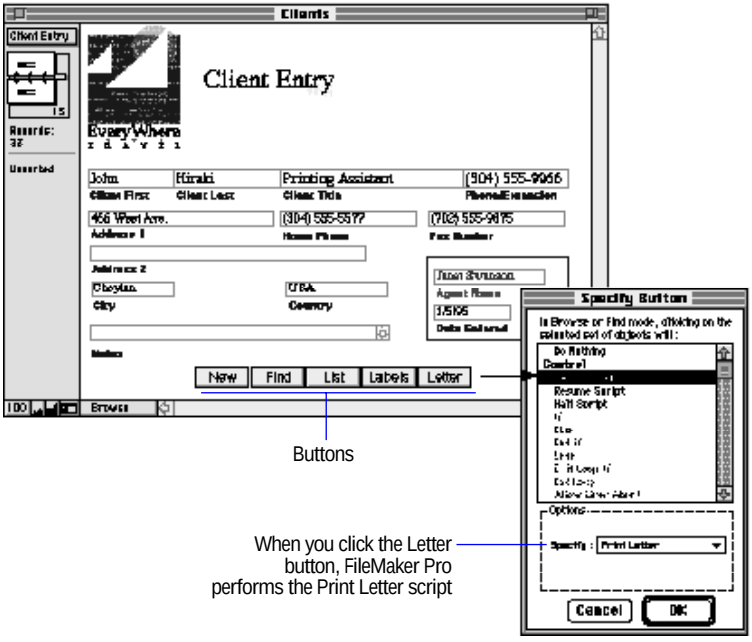
Note You can’t stop a script that contains the Allow User Abort [Off] step.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- scripts, performing

Using buttons with scripts

A *button* is an object on a layout that you can click to perform one script step or an entire script.



Keep these points in mind:

- To show borders around buttons in Layout mode, choose Buttons from the Show menu. See “ Showing button, text, and field boundaries” on page 3-43.
- To set buttons so they don’t print, see “Keeping objects from printing” on page 6-9.
- FileMaker Pro doesn’t store settings (like find requests) with a button, but you can define a script that stores the settings and then define a button to perform it. See “Storing settings for a script” on page 5-15.

Defining buttons

Use the following steps to create a button labeled with text. To specify a preference option for rounded or rectangular buttons, see “Setting layout preferences” on page 9-3.

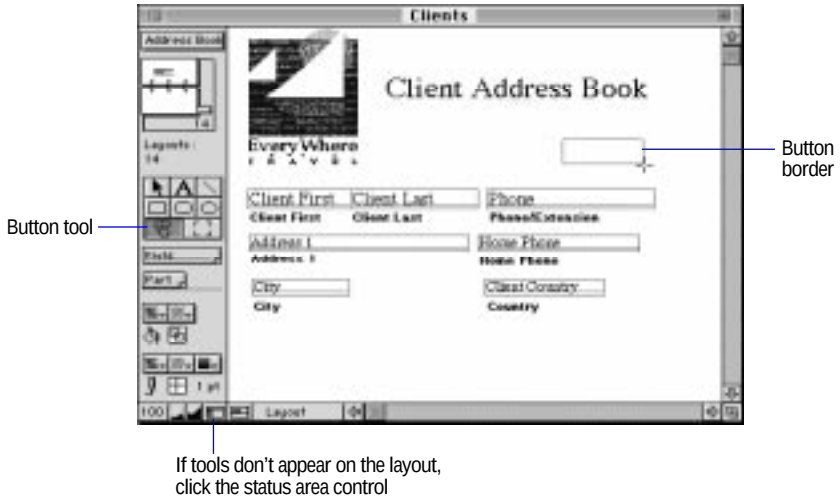
Note To create another type of button (for example, a circle with a graphic), see FileMaker Pro Help.

1. If you’re defining a button that performs an entire script, create the script.

   See “Defining scripts” on page 5-12.

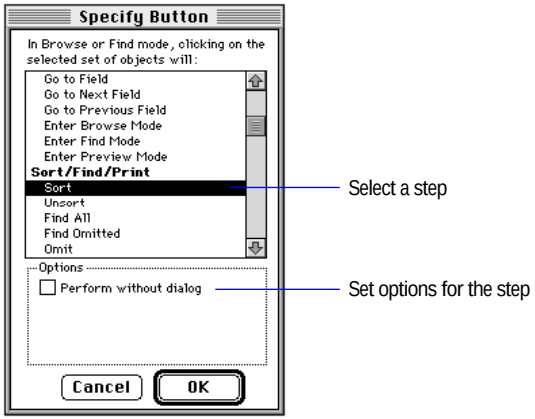
2. In Layout mode, choose a layout, and then click the button tool.

   See “Working with the drawing tools” on page 3-38.



3. Drag the crosshair pointer on the layout to draw the button.
4. In the Specify Button dialog box, select a step, set step options (if they’re available), and then click OK.

See “Understanding ScriptMaker steps” on page 5-4.



5. At the insertion point, type a label for the button, and then press Enter.
6. Switch to Browse or Find mode to use the button.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- buttons

Copying, changing, or deleting buttons

To	Do this in Layout mode
Select a button	Use the pointer tool. See “Selecting objects” on page 3-39.
Move a button	Using the pointer tool, drag the button. See “Moving objects” on page 3-44.
Change the appearance of a button	See “Changing the appearance of objects” on page 3-50.
Change a button label	See “Typing text” on page 3-80 and “Changing the appearance of text” on page 3-88.
Copy a button	See “Cutting, copying, and pasting objects” on page 3-45. When you copy a button, you copy the object and the button definition. If you copy a button from another file, change the button definition if fields, layouts, or scripts don’t match
Change a button definition	Double-click the button. In the Specify Button dialog box, select a step and options, and then click OK. To modify a script that the button performs, see “Changing and duplicating scripts” on page 5-16.
Delete a button	Select the button, and then press Delete

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- buttons

Working with Apple events

Apple events are Mac OS commands that automate, customize, and control many Mac OS applications. FileMaker Pro can send Apple events to any application that supports them. The application that receives an Apple event is the *target application*.

FileMaker Pro uses ScriptMaker to send Apple events to other applications. (See “Defining a script to send Apple events” in the next section.) For example, a script can send Apple events to open a spreadsheet application, send it data, and then create a chart.

Apple events are grouped into *suites*. FileMaker Pro supports the Required suite, a special subset of the Core, Table, URL, and Database suites, and its own FileMaker suite. It also supports the *object model*, a standard way to refer to objects.

FileMaker Pro can receive Apple events from scripting applications that are designed to send Apple events, like the AppleScript Script Editor. Applications can send events to FileMaker Pro to perform many tasks, including:

- requesting data from a record or list of records
- requesting a list of scripts and performing scripts
- requesting a list of fields and getting data from the fields
- sorting or finding records
- placing or modifying data in any record, field, or list of records or fields
- switching layouts
- creating and choosing menu items
- opening and closing databases

FileMaker Pro can also send commands written in the AppleScript scripting language. Scripting languages use terms like "open" and "field" instead of the four-character codes in Apple events. (See "Defining a script to perform AppleScript commands" on page 5-28.)

Support for Apple events is a technical feature for FileMaker Pro developers. To learn more about Apple events:

- open the Apple Events Reference database (included when you install FileMaker Pro using the Easy Install option). The database contains a complete description of all FileMaker Pro events and objects, including examples and usage tips.
- contact the Apple Programmers and Developers Association (APDA).
- read third-party books about Apple events and scripting applications.
- log into the scripting forums available on many online services.

Keep these points in mind:

- To determine if an application supports Apple events, refer to the documentation or the application's scripting dictionary (called an *AETE resource*). You can view the dictionary using the AppleScript Script Editor.

- You can't send events directly to FileMaker Pro using the Send Apple Event step. Instead, use the Perform AppleScript step. For more information, see the Apple Events Reference database. You can also use an applet, droplet, or scripting application that communicates with FileMaker Pro.
- FileMaker Pro can't receive Apple events while performing a ScriptMaker script.
- FileMaker Pro can send Apple events with text or AppleScript commands that are located in a related file. See chapter 10, "Using data from related files."
- To send Apple events to FileMaker Pro on a network, you need a local copy of FileMaker Pro. Any commands you send to a guest database are relayed to the host. See chapter 7, "Networking and access privileges."

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Apple events

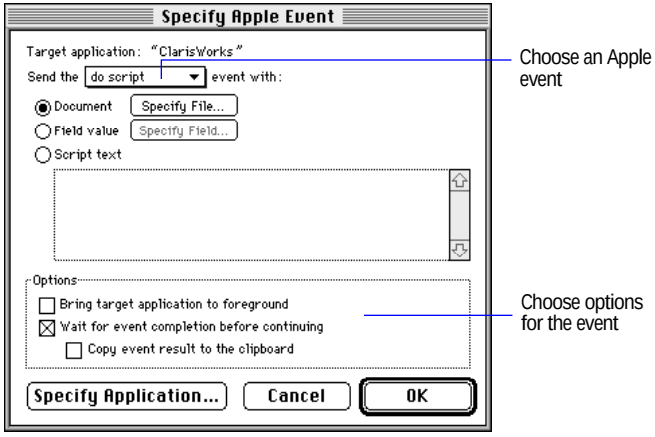
Defining a script to send Apple events

Before you send Apple events, consider the following:

- Use the Send Apple Event step to send Apple events to other applications. Each Send Apple Event step sends one event. You can include more than one Send Apple Event in a script.
- When specifying a field value or script text, FileMaker Pro sends text as a parameter with the Apple event. See the documentation that came with the target application to determine what information it expects to receive with an event.

1. Choose ScriptMaker from the Script menu.
2. In the Define Scripts dialog box, create a script or select an existing script, and then click Edit.
3. In the Script Definition dialog box, double-click Send Apple Event in the Available Steps list, and then click Specify.

4. In the Specify Apple Event dialog box, click Specify Application.



5. In the Open File dialog box, select the target application, and then click Open.
6. In the Specify Apple Event dialog box, choose the event you want to send from the pop-up menu.

   See "Choosing an Apple event to send" on page 5-27.
7. Select options for the event, and then click OK.

Select	To
Bring target application to foreground	Display the target application when it performs the Apple event. Deselect this option to run the target application in the background or to perform scripts more quickly
Wait for event completion before continuing	Wait for the Apple event to finish before returning control to ScriptMaker
Wait for event completion before continuing and Copy event result to the clipboard. Deselect Bring target application to foreground.	Copy the result of an event performed in the target application. Use this option when sending events to an application that can send an Apple event reply, like the HyperCard application. In the next step, you can add ScriptMaker steps to paste the data into a FileMaker Pro field

8. In the Script Definition dialog box, finish defining or editing the script, and then click OK.

9. If you are changing an existing script and the Script Settings dialog box appears, select options, and then click OK.

See step 6 on page 5-17.

10. Click Done.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Apple events

Choosing an Apple event to send

When you add the Send Apple Event step to a script, you choose an event in the Specify Apple event dialog box. The following table explains the options.

To	Do this
Open the target application	Choose open application. In the Open File dialog box, confirm the target application you selected in step 5 in "Defining a script to send Apple events" on page 5-26, or select a different application. Click Open
Open a file	Choose open document ■ To open the same file each time FileMaker Pro sends the event, click Document, and then click Specify File. In the Open File dialog box, select a file, and then click Open ■ To open a file using a pathname that's stored in a field in the current record, click Field value, and then click Specify Field. In the Specify Field dialog box, select a field on the current layout, and then click OK ■ To open a file by specifying a path to the file, click Script text and type a path in the text box. (For example, HD:Database folder:Database file.) This option opens the same file each time FileMaker Pro sends the event
Perform a script in the target application	Choose do script. The target application must support the do script event ■ To specify the file that contains the script, click Document, and then click Specify File. In the Open File dialog box, select a file and then click Open ■ To perform a script that's stored in a field in the current record, click Field value, and then click Specify Field. In the Specify Field dialog box, select a field on the current layout. (The field can contain a complete script or a script name depending on how the target application supports the do script event.) Click OK ■ To send a script with the event, click Script text and type script commands or a script name in the text box. The script must be written in the target application's scripting language, not AppleScript. This option sends the same script each time FileMaker Pro sends the event

To	Do this
Perform other types of Apple events	Choose Other. In the Specify Event dialog box, type the Event Class and Event ID (four-character codes specified by the target application). Click OK ■ To send an Apple event to the same file each time you perform the script, click Document, and then click Specify File. In the Open File dialog box, select a file, and then click Open ■ To send text that's stored in a field in the current record, click Field value, and then click Specify Field. (The event must accept a text parameter.) In the Specify Field dialog box, select a field on the current layout. Click OK ■ To send a text parameter with the event, click Script text and type the parameter in the text box. (The event must accept a text parameter.) This option sends the same parameter each time FileMaker Pro sends the event

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ Apple events

Defining a script to perform AppleScript commands

Use the Perform AppleScript step to perform AppleScript commands. The AppleScript extension, or the Apple Event Manager and QuickTime extensions must be installed on your system. (See the Apple Computer, Inc. Web site at http://www.apple.com for more information.)

1. Choose ScriptMaker from the Script menu.
2. In the Define Scripts dialog box, create a script, or select an existing script and click Edit.
3. In the Script Definition dialog box, double-click Perform AppleScript in the Available Steps list, and then click Specify.
4. In the Specify AppleScript dialog box, select options, and then click OK.

To	Do this
Perform AppleScript commands that are stored in a field	Click Field value. In the Specify Field dialog box, choose a field that contains AppleScript commands, and then click OK. The commands are compiled each time FileMaker Pro performs the script

To	Do this
Perform AppleScript commands (up to 32K)	Click Script text, and then type AppleScript commands in the text box. The commands are compiled when you click OK, and then FileMaker Pro stores the source

5. In the Script Definition dialog box, finish defining or editing the script, and then click OK.
6. If you are changing an existing script and the Script Settings dialog box appears, select options, and then click OK.

   See step 6 on page 5-17.
7. Click Done.

See “Changing monitor settings” on page 5-37 for an example script.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- AppleScript commands

Examples of ScriptMaker scripts

The following sections show scripts that you can use as starting points for your work. Before reading the examples, you should understand how to use ScriptMaker. For information about script steps or more examples, see FileMaker Pro Help.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

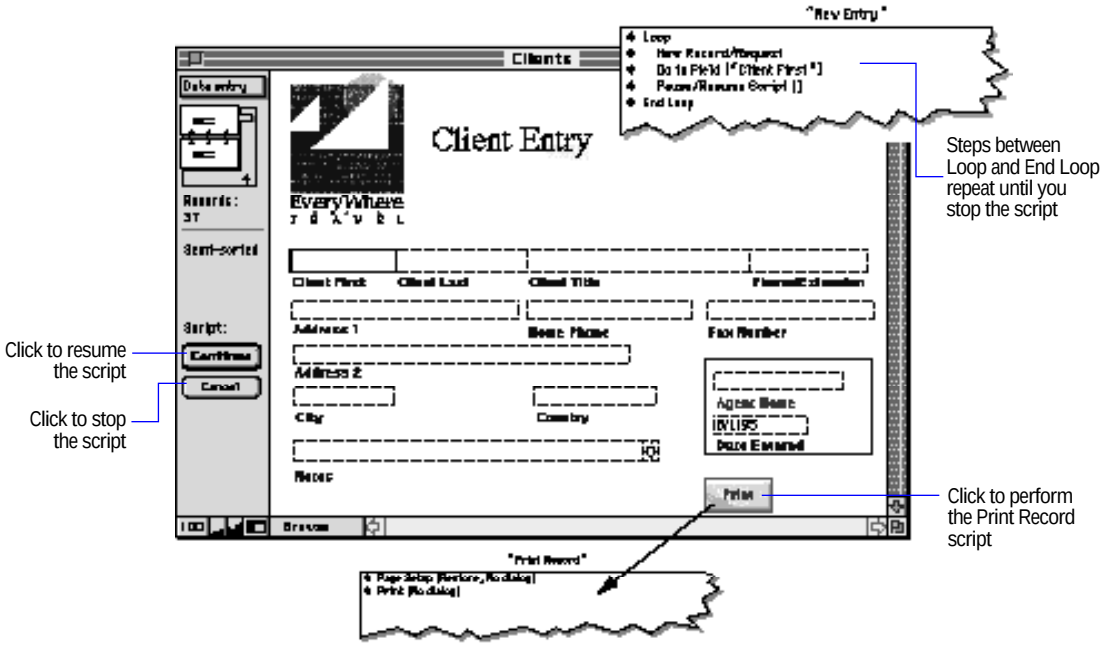
- script examples
- script steps

Entering and printing data

This example illustrates a simple way to automate data entry. When you perform the New Entry script, it creates a record, and then pauses so you can enter data. When the script pauses, you can:

- resume the script by clicking Continue or pressing Enter. The script *loops* (repeats steps) to create a record.
- print the current record by clicking the Print button on the layout. FileMaker Pro performs the Print Record script, and then returns to the paused New Entry script.

- stop the script by clicking Cancel.



The following sections describe how to define the example scripts and button.

Example step 1: Define the New Entry script

In ScriptMaker, define the New Entry script with the steps shown in the previous figure.

Example step 2: Store page setup and print settings

Store page setup and print settings for the Print Record script so you don't have to select them each time you perform the script.

1. Choose Page Setup from the File menu, choose the paper size and orientation, and then click OK.
2. Choose Print from the File menu, select Current record, and then click Print.

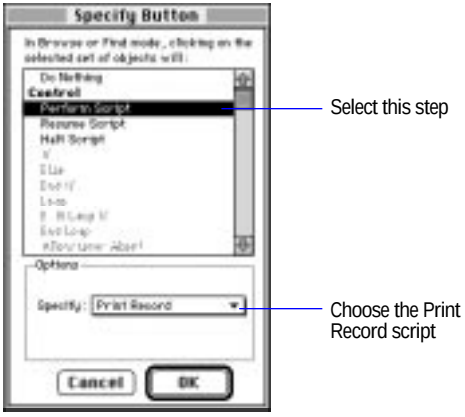
Example step 3: Define the Print Record script

In ScriptMaker, define the Print Record script with the steps shown in the previous figure. Choose the following options to use the stored settings when you perform the script.

For this step	Select these options
Page Setup	▪ Restore setup options ▪ Perform without dialog
Print	Perform without dialog

Example step 4: Define the Print button

On the Client Entry layout, define a button to perform the Print Record script. (See “Defining buttons” on page 5-21.)



Finding data

This example illustrates a simple way to automate finding information. When you use this Find Information script, it repeats the last find that was performed before the script was created. You can set up additional scripts to automate other finds you want to do.

Example step 1: Perform the Find you want scripted

Choose Find from the Mode menu. Type the data you want to find, then click the Find button. (For more information on performing finds, see “Finding information” on page 4-25.)

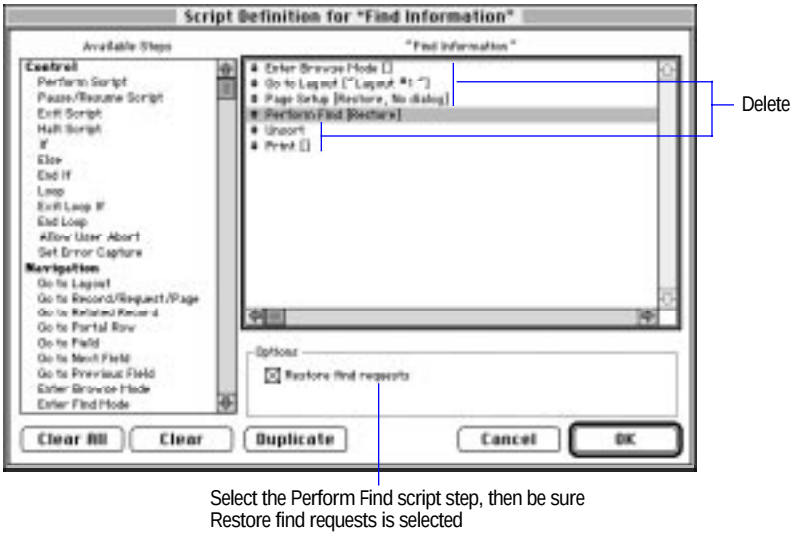
Example step 2: Create the new script

Choose ScriptMaker from the Script menu. In the Script Name box, type `Find Information`. Click Create.

Example step 3: Define the Find Information script

In the Script Definition box, you see that ScriptMaker has automatically specified six script steps for you.

1. Delete the Enter Browse Mode, Go to Layout, Page Setup, Unsort, and Print script steps. You can delete these script steps by clicking to select them, then pressing Delete.
2. For Options, be sure Restore find requests is selected. Click OK.
3. Click Done.



Displaying customized layouts

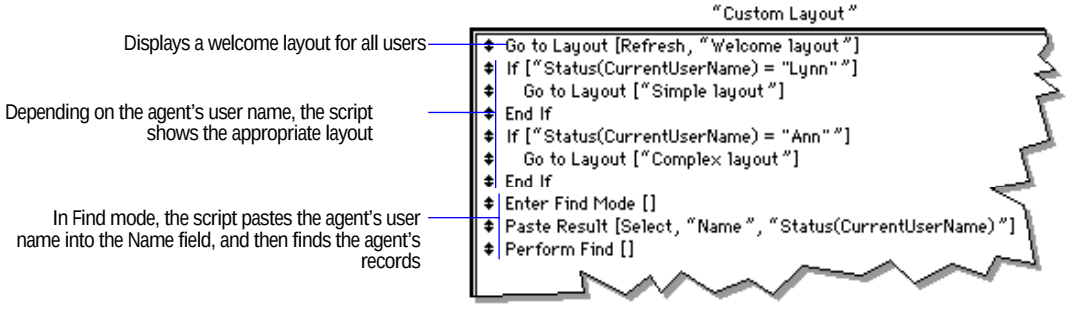
In this example, a travel agency has a database that stores information about its clients. One agent likes to view the information in a simple layout that shows only the agent's name, and the client's name and telephone number. Another agent prefers a more complex layout that displays the agent's name, and the client's name, address, phone number, and travel preferences.

The following sections explain how to define a startup script that uses the current user name to display the correct layout and client records.

Note For this example, you should know how to specify a user name (see "Setting general application preferences" on page 9-2) and a startup script (see "Setting document preferences" on page 9-7.)

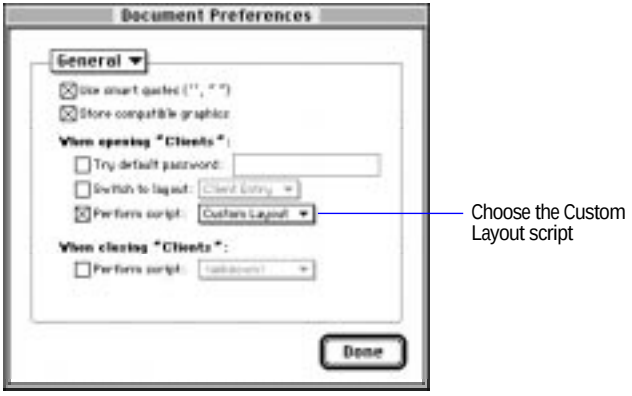
Example step 1: Define the startup script

In ScriptMaker, define the Custom Layout script with the steps shown below.


"Custom Layout"
Displays a welcome layout for all users
Depending on the agent's user name, the script shows the appropriate layout
In Find mode, the script pastes the agent's user name into the Name field, and then finds the agent's records
Go to Layout [Refresh, "Welcome layout"]
If ["Status(CurrentUserName) = "Lynn""]
Go to Layout ["Simple layout"]
End If
If ["Status(CurrentUserName) = "Ann""]
Go to Layout ["Complex layout"]
End If
Enter Find Mode []
Paste Result [Select, "Name", "Status(CurrentUserName)"]
Perform Find []

Example step 2: Set the startup option

In Document Preferences, set the option to perform the Custom Layout script each time the file is opened.



Finding duplicate records

In this example, a travel agency uses a registration database to track clients who sign up for a cruise seminar. The database contains duplicate records because some clients called the travel agency to sign up and also mailed in a registration form for the same seminar.

The following sections explain how to set up a database and define a script to find duplicate records.

Note For this example, you should understand global fields (see page 2-10) and know how to define fields (see page 2-3).

Example step 1: Create a unique value for each record

The Seminar file contains records of clients who register for a seminar. Each client has a unique identification number, the Client ID field. Some records contain the same identification number—these are the duplicate records you want to find.

Tip If your database doesn't have a unique identification field, define a calculation field to create one from existing fields. For example, combine first name, last name, and birthday to create a unique identification for each client.

Example step 2: Add two fields

Define these fields in the Seminar file:

- A text field, called Mark. When the script finds a duplicate record, it places an x in this field to mark the record.
- A global field, called Global, to store the unique identification while comparing records. Global should be the same data type as the Client ID field.

Example step 3: Display the Mark field

Create a layout that displays the Mark field, or add the field to an existing layout. You'll use this layout to store Find settings in the following step.

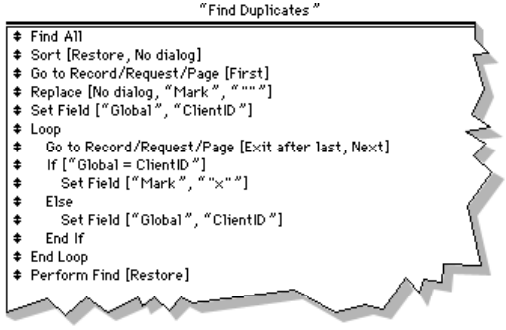
Example step 4: Store settings

Store Sort and Find settings for the script.

To store this setting	Do this
Sort	In Browse mode, choose Sort from the Mode menu. If fields appear in the Sort Order list, click Clear All. Click ClientID, choose Ascending order, click Move, and then click Done
Find	Choose a layout that displays the Mark field. In Find mode, type x into the Mark field, and then switch to Browse mode. (You don't have to perform the find request)

Example step 5: Define the script

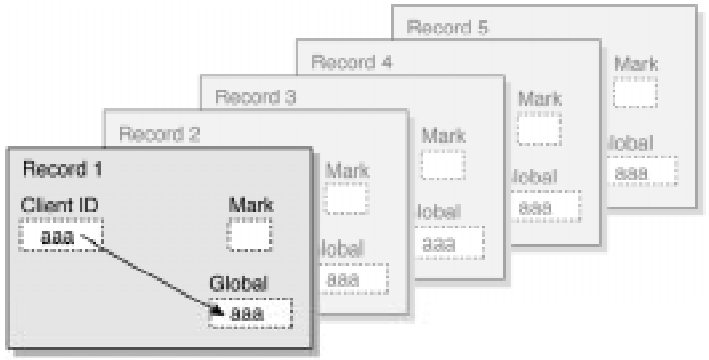
In ScriptMaker, define the Find Duplicates script.



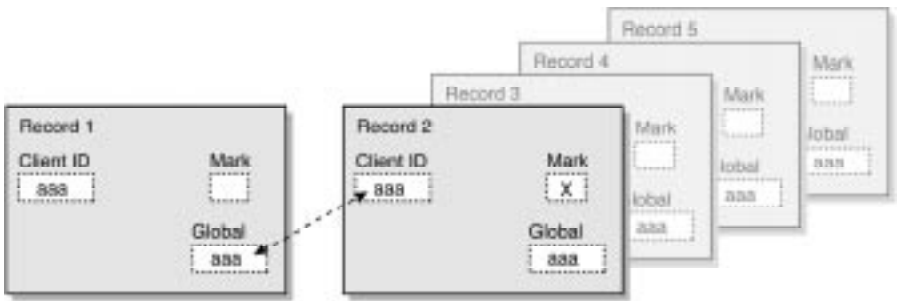
When you perform the Find Duplicates script:

1. It finds all records, and then sorts them by the ClientID field so that records with the same ClientID are grouped together.

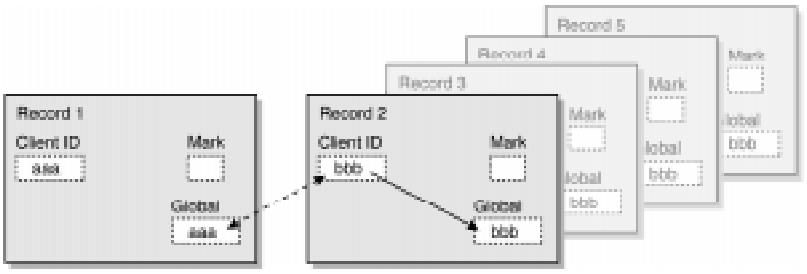
2. Starting with the first record, the script copies the value from the ClientID field into the Global field.



3. The script goes to the next record and compares the value in ClientID with the value in Global.
   - If the values match, the record is a duplicate and the script puts an x in the Mark field.



- If the values don't match, FileMaker Pro copies the ClientID value into Global. It doesn't change the Mark field.



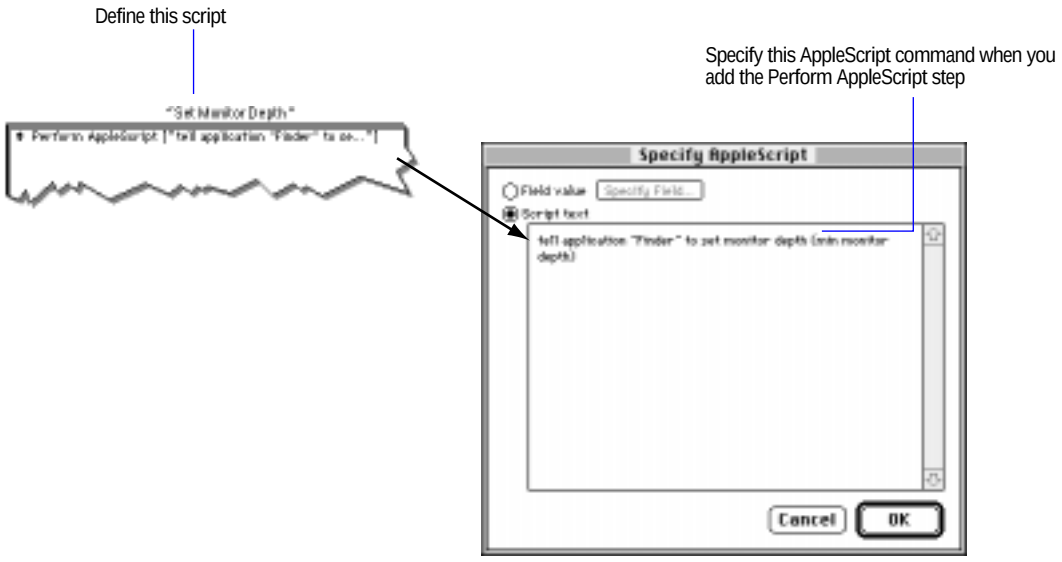
4. The script repeats step 3 until it reaches the last record in the file.
5. The script finds all records with an x in the Mark field, and then displays the found set of duplicate records.

Changing monitor settings

In this example, the Set Monitor Depth script uses AppleScript commands to set your primary monitor to a minimum bit depth. For example, it sets a monitor that supports 256 colors to a bit depth of black and white.

Note To use this script, you must have a scriptable version of the Finder (included in System 7.5 or later).

For information about Apple events and AppleScript, see "Working with Apple events" on page 5-23.


Define this script
"Set Monitor Depth"
Perform AppleScript ["tell application "Finder" to se..."]
Specify this AppleScript command when you add the Perform AppleScript step
Specify AppleScript
Field value
Specify Field...
Script text
tell application "Finder" to set monitor depth (min monitor depth)
Cancel
OK

Chapter 6: Previewing and printing information

This chapter describes how to print the information in your FileMaker Pro files, including records, forms, and definitions of fields and scripts.

Note The information in this chapter does not apply to users working with databases on the Web. When users work with databases on the Web, the Web browser software governs printing.

Important Before you read this chapter, be sure you know how to use FileMaker Pro Help, as explained in the preface, “Getting help.” You should also understand layouts and parts. (See chapter 3, “Laying out and arranging information.”)

Preparing to print

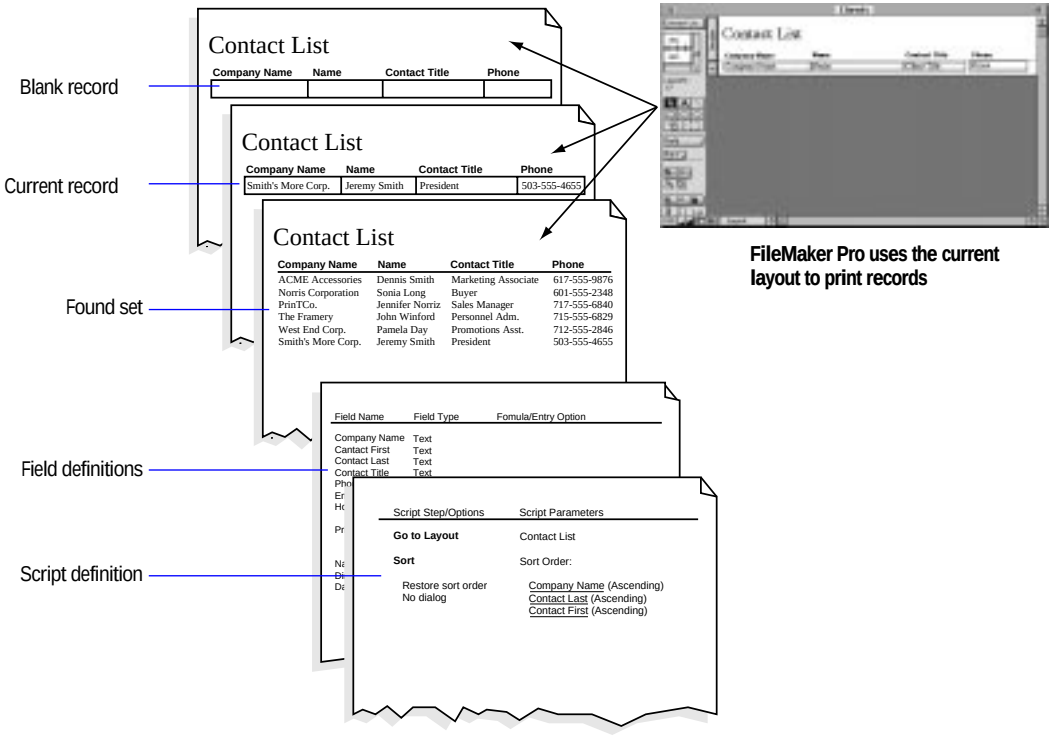
With FileMaker Pro, you can print:

- records you’re browsing (the found set) or a record you select in Browse mode, including data from related files.

  FileMaker Pro formats the records using the current layout. For example, use a Labels layout to print mailing labels.

  If a layout contains a header, footer, and body, FileMaker Pro prints as many records on each page as can fit between the header and footer. If a record at the end of the page doesn’t fit, FileMaker Pro prints it on the next page. (See “Paginating a layout” on page 3-32 and “Changing part types and options” on page 3-36.)
- blank records to create a form using the current layout.

- definitions of fields or scripts to see the structure of your database.



FileMaker Pro uses the current layout to print records

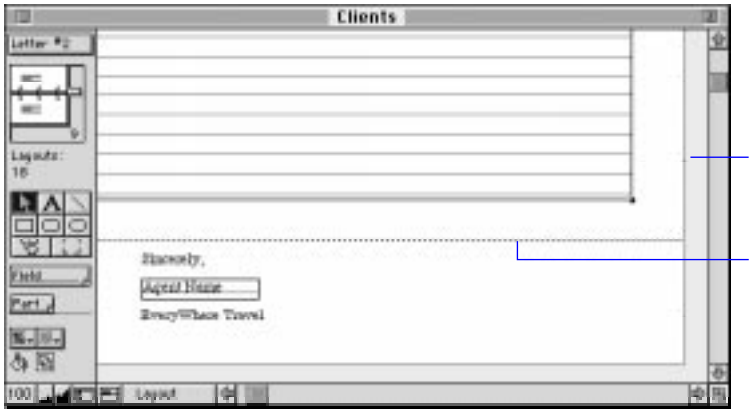
The margins, current layout, and printer and page setup options affect how FileMaker Pro prints records.

Displaying margins

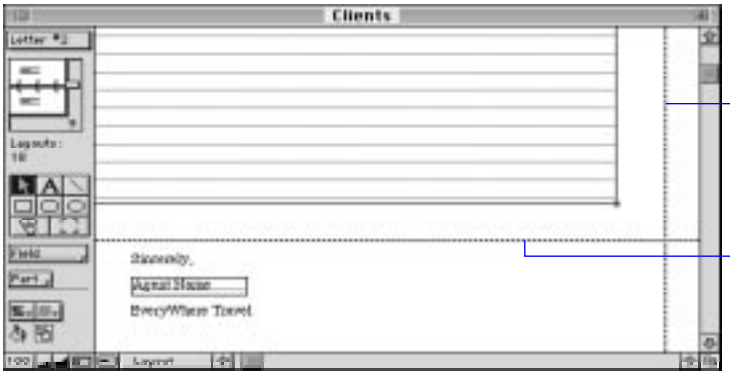
In Layout mode, choose Page Margins from the Show menu to see where a layout will print on a page.

Most printers can't print to the edge of the paper. If you place objects in the margins or outside the area the selected printer can print to, you see them in Browse and Find modes. You don't see the objects when you preview or print.

Layout showing margins



Layout not showing margins



Setting margins

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- page margins

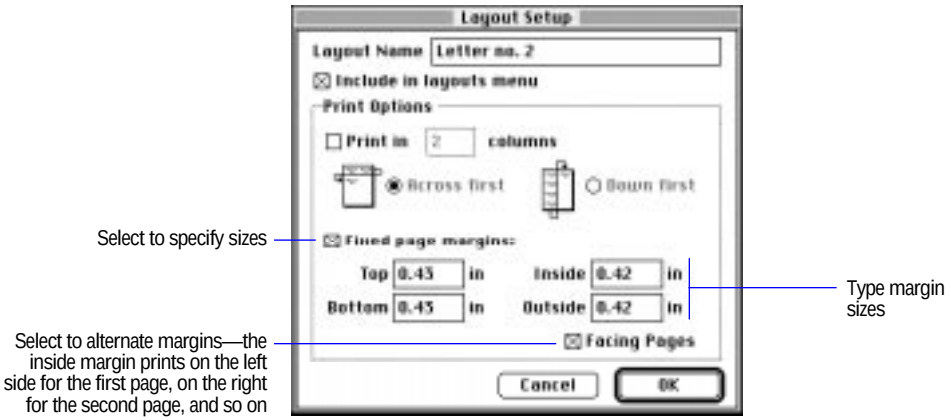
You can set different margins for each layout.

1. Choose Page Setup from the File menu, confirm the printer and paper settings, and then click OK.

   To switch printers, see "Specifying a printer" on page 6-14. For information about other settings, see the manual that came with your printer.

2. In Layout mode, choose a layout, and then choose Layout Setup from the Mode menu.

3. In the Layout Setup dialog box, select Fixed page margins, type values for the margins, and then click OK.



4. Switch to Preview mode to check the margins.

Keep these points in mind:

- If you don't select Fixed Page Margins, FileMaker Pro uses the printer's default margins.
- In Layout mode, choose Set Rulers from the Mode menu to change the unit of measure for margins. See "Positioning and sizing objects" on page 3-40.

- If you select the Print in *<value>* columns option for a layout and change the size of the columns, the columns resize to fit the new page width when you change the left or right margins. See “Arranging records in columns” on page 3-20.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ page margins

Removing spaces at the end of fields and parts

FileMaker Pro can move information vertically or horizontally to close gaps at the end of fields and parts when you print. This movement is called *sliding*. For example, you can create a letter layout so the comma in the greeting prints right after the last name, even though some names are longer than others.

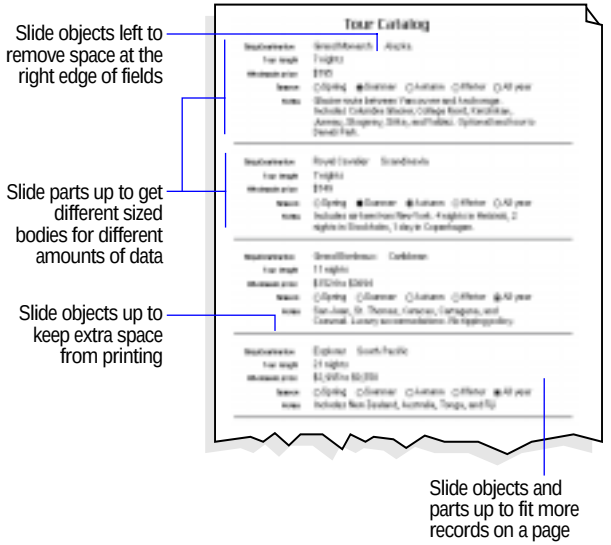
When objects slide:

- fields shrink to eliminate empty space within the field boundaries. Sliding does not remove empty space between fields.
- objects (including fields) slide left or up corresponding to the amount of space the fields to the left or above the objects shrink.

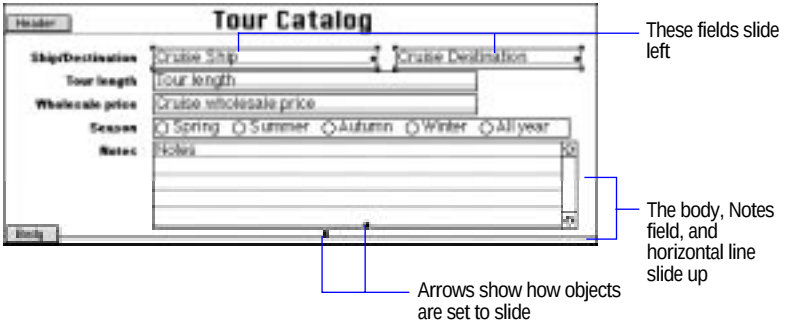
You can set parts to shrink when the fields in them slide up. When parts shrink, FileMaker Pro can print more records on a page.

Printing without sliding objects

Printing with sliding objects


Slide objects left to remove space at the right edge of fields
Slide parts up to get different sized bodies for different amounts of data
Slide objects up to keep extra space from printing
Tour Catalog
Slide objects and parts up to fit more records on a page

In Layout mode, choose Sliding Objects from the Show menu to see which objects slide and in which directions. The following layout illustrates how fields are set to slide for the previous figure.



Keep these points in mind:

- You can slide any object. Non-field objects, like the horizontal line in the previous example, can slide if you place a sliding field above or to the left of the objects. When a non-field object slides, it moves to another place on the layout but doesn't shrink. When a field slides, it moves to another place on the layout and shrinks if the data doesn't fill the field boundaries.
- When you slide objects or parts, FileMaker Pro prints the objects relative to each other, not precisely as you placed them on your layout.
- If you leave blank space on a layout, FileMaker Pro keeps that space. For example, if you create a body with one inch of space below the lowest object, FileMaker Pro leaves one inch below the lowest object when it shrinks the body.
- You can also use merge fields to align text in form letters, envelopes, or labels. (See "Adding merge fields" on page 3-58.) Use sliding instead of merge fields to:
  - align non-text objects, like graphics
  - move the enclosing part up
  - align formatted fields, like value lists and repeating fields
  - enter data into the layout. If you use merge fields, you must use a different layout for data entry.
- Don't slide parts up on layouts that require a fixed vertical spacing, like labels.
- Headers, footers, title headers, and title footers never slide up.
- For information about sliding related fields and portals, see "Changing the appearance of related fields and portals" on page 10-28.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ sliding objects

Sliding objects and parts

1. To slide objects left, align their top edges and align data in text fields to the left.

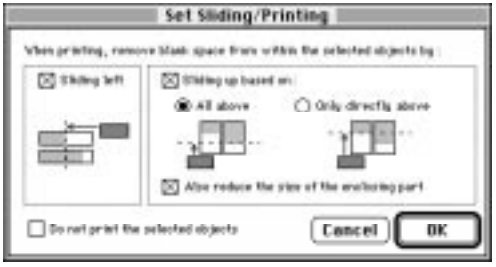
   See "Aligning objects to each other" on page 3-48 and "Formatting text paragraphs" on page 3-84.

2. In Layout mode, select the objects to slide, and then choose Sliding/Printing from the Format menu.

   To slide an object left, you must also select the field to the left of it. To slide an object up, also select the field above it.

3. In the Set Sliding/Printing dialog box, select the sliding options you want, and then click OK.

Select this option	To
Sliding left	Close up blank space to the right of the object, allowing objects to slide left into the unused space. This option keeps punctuation with data, moves the contents of fields closer to each other, and so on
Sliding up based on	Close up blank space above an object ▪ Select All above to close up blank space above an object based on the position of all objects above it. This option maintains consistent vertical spacing among columns ▪ Select Only directly above to close up blank space above an object based on the position of the objects directly above it. This option allows the spacing in a column to adjust independently of the other columns ▪ Select Also reduce the size of the enclosing part to close up the space in the part that contains the fields. To slide the part up relative to all objects, set this option for all the objects that are sliding up. To slide the part up relative to a single object, set this option for that object only



4. Switch to Preview mode to see objects and parts slide.

   See "Previewing before printing" on page 6-11.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ sliding objects

Sliding repeating fields

If you set sliding options for repeating fields, be sure not to change the way the information is aligned.

Repeating fields in Layout mode

Repeating fields with no sliding options set

Repeating fields sliding left

Repeating fields sliding up with "Only directly above" option

To keep values in repeating fields	Do this
From sliding left independently of the other values	Fill the field with a color (like white) or add a field border to the repeating field
From sliding up independently of the values in adjacent repeating fields	Select Sliding up based on All above in the Set Sliding/Printing dialog box. See the previous section

Keeping objects from printing

To keep objects, like buttons, from appearing when you print records:

1. In Layout mode, select the objects you don't want to print.
2. Choose Sliding/Printing from the Format menu.
3. In the Set Sliding/Printing dialog box, select Do not print the selected objects, and then click OK.

Keep these points in mind:

- You can slide nonprinting objects to close up blank space. See "Sliding objects and parts" on page 6-7.

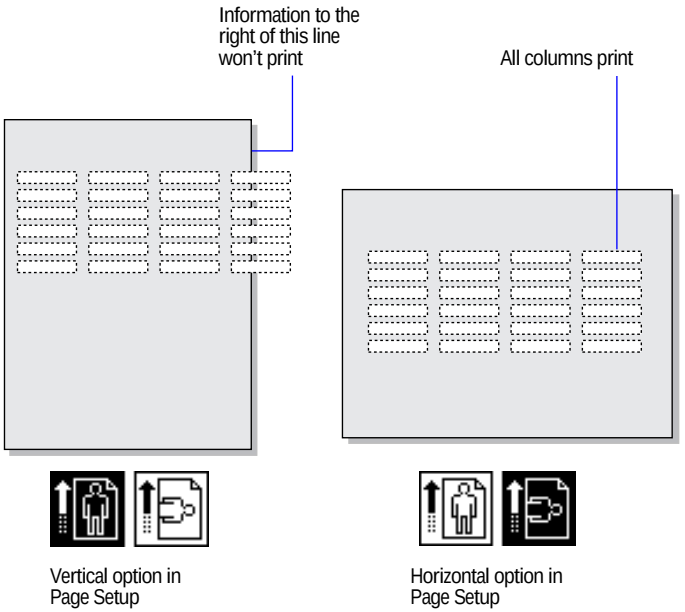
- You see nonprinting objects in Browse and Layout modes, but not when you preview or print. Choose Non-Printing Objects from the Show menu to display nonprinting objects with a gray border in Layout mode.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ printing data

Printing Extended columnar layouts

For Extended columnar layouts, select the horizontal (landscape) page setup option so that more columns print on a page. See “ Printing” on page 6-12.


Information to the right of this line won't print
All columns print
Vertical option in Page Setup
Horizontal option in Page Setup

Tip If you can't print all columns on one horizontal page (or you want to print a vertical page), create several layouts that show fewer columns, and then print all the layouts.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Extended columnar layout

Printing layouts with subsummaries

Before printing a layout with subsummary parts, sort the records by the break field (the field that groups the records). See “ Adding a summary part” on page 3-30 and “Sorting records” on page 4-31.

Keep these points in mind:

- Switch to Preview mode after you sort to see how your records will print. See “Previewing before printing” on page 6-11.
- You can start a new page for each subsummary part. If you print records in columns down the page, FileMaker Pro starts a new column, not a new page. See “Arranging records in columns” on page 3-20.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- subsummary layout parts

Printing labels and envelopes

To print labels, set up a Labels layout (see “ Setting up to print on labels” on page 3-12). For information about printing envelopes, see “Setting up to print on envelopes” on page 3-18.

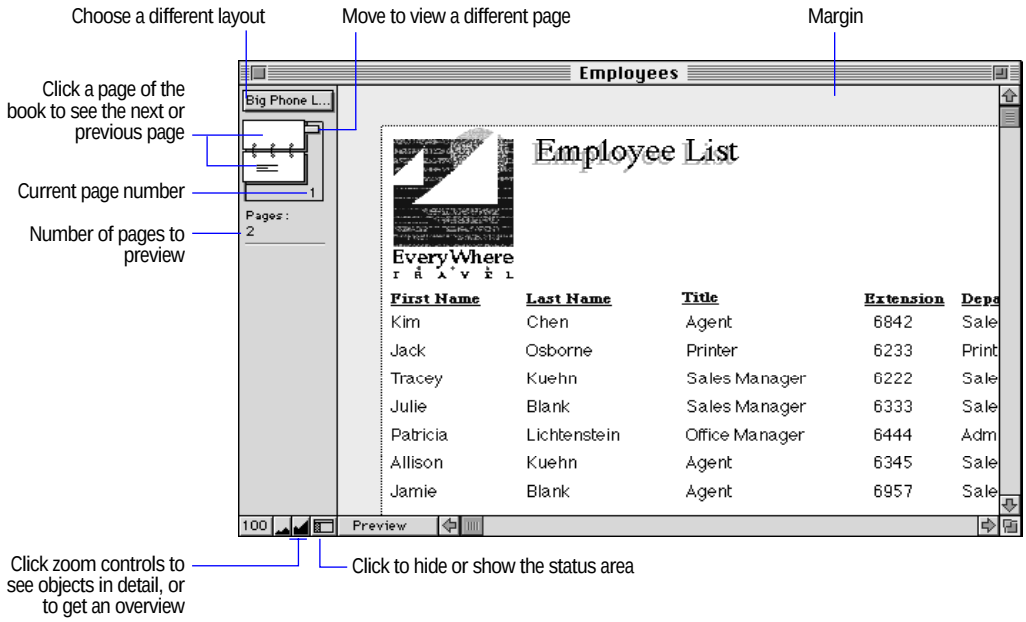
? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- labels layout
- printing, envelopes

Previewing before printing

In Preview mode, you see how records will look when they’re printed, but you can’t change records or layouts. To switch to Preview mode, choose Preview from the Mode menu.

Note You cannot use the preview feature to see how your database looks when published on the Web. You must use Web browser software.



Printing

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ preview mode

You can print all or part of a database. See "Preparing to print" on page 6-1.

1. If you're printing records, switch to the layout you want to use.
2. If you have more than one printer, specify which one you want to use.

   See the next section, "Specifying a printer."
3. Choose Page Setup from the File menu, confirm the options, and then click OK.

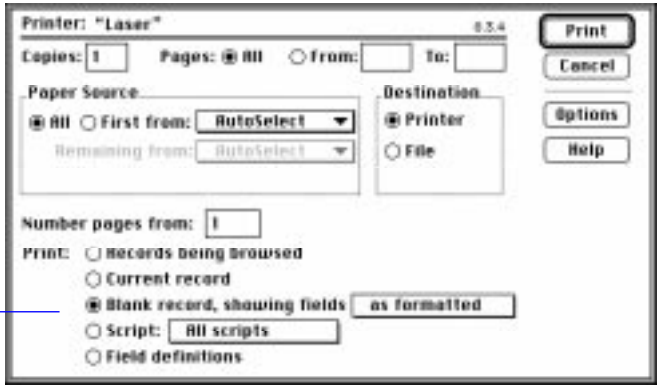
   For information about Page Setup options, see the manual that came with your computer or printer.

4. If you're printing records, browse the ones you want to print, and then switch to Preview mode to check them.

   Use Find, Omit, Find All, and Sort, if needed. If your layout has a subsummary, sort on the break field. (See "Printing layouts with subsummaries" on page 6-11.)

5. Choose Print from the File menu, and then select options in the Print dialog box.

In the Print area, select	To print
Records being browsed	All records in the found set
Current record	The record currently selected in Browse mode
Blank record, showing fields, and then choose an option from the pop-up menu	A blank record using the current layout. Use this option to create a form that represents your database. Choose as formatted to print the fields as specified in the Field Borders dialog box. (See "Adding borders, fill, and baselines to fields" on page 3-73.)
Script, and then choose a script from the pop-up menu	Script definitions. Choose All scripts to print every script definition in the file
Field definitions	A list of all the fields defined for the file, including formulas and entry options



6. Click Print.

To stop printing, press Command-Period.

Specifying a printer

1. Choose Chooser from the Apple menu.
2. In the Chooser dialog box, select a printer, respond to any messages, and then click the close box.

For information about printer options, see the manual that came with your printer.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- print options

Chapter 7: Networking and access privileges

You can share FileMaker Pro files with other users on a network. By sharing files, you can work simultaneously with others in your work group, and save disk space by keeping files in a central location.

You can also share your FileMaker Pro files on the Web using FileMaker Pro Web Companion. For more information, see chapter 11, “Using FileMaker Pro Web Companion.”

To be sure that the right people see the right information in your files, you can set FileMaker Pro access privileges. This chapter explains how to protect files using passwords and groups. You can use these same passwords to protect files shared over the Web. For even more complete protection, you can use FileMaker Pro Web Companion Web Security databases. For more information, see page 11-16, “Database security.”

Important Review the section “Protecting your files” on page 7-11 for information on how FileMaker Pro access privileges work with operating system network access privileges.

Before you read this chapter, be sure you know how to use FileMaker Pro Help, as explained in the preface, “Getting help.”

Sharing files

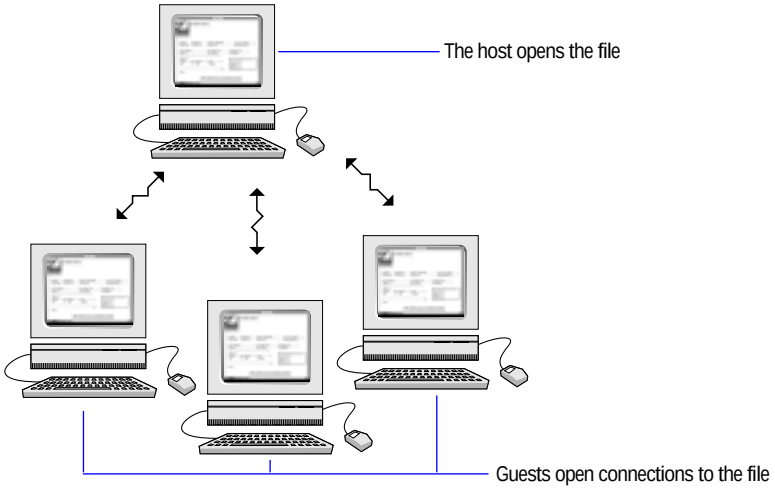
To share your FileMaker Pro files with other users, you need:

- a computer running the Mac OS
- a connection to a network
- FileMaker Pro installed on your computer with the correct network options selected

See the *FileMaker Pro Installation and New Features Guide* for more information.

Important Your FileMaker Pro licensing agreement requires that you own the same number of copies of the FileMaker Pro application as the number of people using FileMaker Pro at the same time.

The first person to open a shared file is the *host*. Any user who opens a shared file after the host is a *guest*.



Keep these points in mind:

- You can share FileMaker Pro files between a computer running Windows and a computer running the Mac OS just as you share files among networked computers on the same platform. For example, you can host a file on a Mac OS–based computer, and then guests on Windows computers or Mac OS–based computers can connect to the same file.

  When you share files between platforms, you may see differences in font mapping, alignment of layout objects, and character set mapping.
- For enhanced file-sharing capabilities, use the FileMaker Pro Server application to host files.
- You don't have to turn on File Sharing (in the Sharing Setup control panel) to share FileMaker Pro files on a network.
- To change network connections, see "Setting general application preferences" on page 9-2.

Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ sharing files

Opening files as the host

To host a file, you must be the first user to open it.

1. Choose Open from the File menu.
2. In the Open File dialog box, select a file, and then click Open.
3. Choose Sharing from the File menu.

   In the File Sharing dialog box, select Multi-User.

   Note If Multi-User is dimmed in the File Sharing dialog box, FileMaker Pro is unable to access the network. An explanation appears below the Multi-User button. You can also get an explanation by choosing Open from the File menu, then clicking Hosts.

4. If the file uses information from other FileMaker Pro files (like related databases, external scripts, or value lists), repeat steps 1 through 4 to open the files and set them to Multi-User.

   Tip Group the files in a single folder to make it easy to locate them.

   Adding an underscore character _ to the end of a database filename (before the .FP3 extension, if any) prevents that database from being listed in the Hosts dialog box. It also prevents the database from being listed on the default home page if you are using FileMaker Pro Web Companion Instant Web Publishing.

You can broadcast messages to guests who are using your database. In the File Sharing dialog box, click Send Message. Type the message, then click OK. Your guest(s) see the message in a dialog box. They can dismiss the dialog box by clicking Cancel—or the dialog box dismisses itself 30 seconds after appearing.

Keep the file open to make it available to guests. For the best performance:

- When you host a file, open it first on the computer that is directly connected to the hard disk on which the file is stored, rather than on another computer using Mac OS personal file sharing.
- If you use a file sharing system (like AppleShare or the Mac OS personal file sharing), host the file from your hard disk instead of hosting it from a file server.

Warning A user can open your database as a guest, then publish it on the Web by enabling the FileMaker Pro Web Companion on his or her computer. In this case, your database is protected over the Web by any FileMaker Pro access privileges you have created. However, you should exercise caution when granting access privileges to guests. For more information, see chapter 11, "Publishing files on the Web."

Choose FileMaker Help Index from the ? or Help menu, and then type:

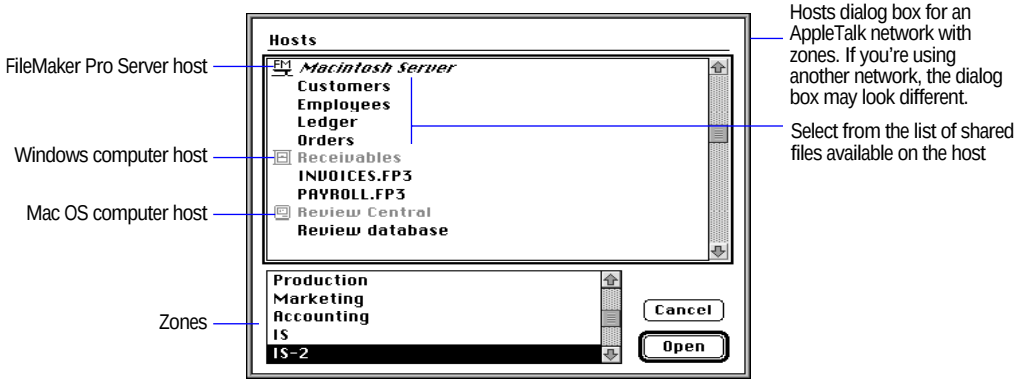
- hosting files

Opening files as a guest

After the host opens a shared file, guests can connect to the file.

1. Choose Open from the File menu.
2. In the Open File dialog box, click Hosts.
3. In the Hosts dialog box, do the following.

For this protocol	Do this
AppleTalk with zones	Select the host's zone in the lower list
AppleTalk without zones	Continue with step 4
MacIPX	Continue with step 4
TCP/IP	To specify a local TCP/IP host, click Local Hosts in the lower list. FileMaker Pro displays local hosts on the network in the upper list To specify a host outside your local TCP/IP area, click Specify Host in the lower list. In the Specify Host dialog box, type a host name or IP address. (To add this host to the list, click Permanently add entry to Hosts list.) Click OK



4. Select a file, and then click Open.

If the network is very busy, the file might not be listed. Use one of the following procedures to check the network for a longer period of time.

For this type of network	Do this
AppleTalk with zones ▪ TCP/IP	Hold down the Option key as you click an item in the lower list.
AppleTalk without zones ▪ MacIPX	Click Cancel to return to the Open File dialog box. Hold down the Option key as you click the Hosts button.

If you select a FileMaker Pro Server host (instead of a shared file), you see the remote administer dialog box. See the FileMaker Pro Server documentation for information.

Keep these points in mind:

- Close your connection to a shared file if the host asks, or if you aren't using the file.
- If some menu commands, layouts, or fields are dimmed, you may have limited access to the file. See "Protecting your files" on page 7-9.
- For information on sharing your file over the Web, see chapter 11, "Publishing files on the Web."

Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ sharing files

Working with shared files

When a shared file is open, the host and guests have access to the same information. FileMaker Pro saves a shared file on the disk where the file resides. It saves changes that the host and guests made to the file, including changes to records, layouts, and scripts.

FileMaker Pro limits access to some commands and records to keep users from interfering with each other.

This user	Can perform these tasks
Host and all guests (every user)	▪ Find, sort, or browse records ▪ Specify a page setup and print ▪ Switch layouts or modes ▪ Import or export data ▪ Check the spelling of a found set ▪ Perform a script by choosing it from the Script menu or clicking a button defined for the script ▪ Change global values. Only the host's changes are saved with the file. When guests open a file with global fields, they see the current values. If the host changes a global value, guests don't see the change until they close the file and then reopen it.
Host or one guest (only one user at a time)	▪ Open the ScriptMaker dialog box ▪ Define or change relationships ▪ Define or change passwords ▪ Define or change value lists ▪ Edit a record or layout. Others can view the record, but no one can modify it until the current user moves to another record or presses Enter in Browse mode. In Layout mode, the current user must move to another layout or switch to another mode.
Host only (all guests must close their connections to the file)	▪ Define fields or change field definitions ▪ Reorder layouts ▪ Define, delete, or change groups and access privileges ▪ Save copies of a file with the Save a Copy As command ▪ Switch the file status between multi-user and single user ▪ Close a shared file

While you are working with a shared file, you might see the pointer change.

This pointer	Means FileMaker Pro is
	Waiting to receive data from the network
	Waiting for the host to finish processing a request from another user

Keep these points in mind:

- Sorting, replacing data, viewing and printing summary report layouts, and other calculation-intensive tasks performed on many records affect the performance of the host and guest computers. Perform these tasks on a small found set, or schedule tasks so they're performed during low usage periods.
- FileMaker Pro saves the host's sort order, find requests, and page setup. If you're a guest, you can save your settings by defining a script. See "Storing settings for a script" on page 5-15.
- With FileMaker Pro for Windows, you can combine information from other applications using Object Linking and Embedding (OLE). When you share FileMaker Pro for Windows files, users of computers running the Mac OS can cut, copy, and paste OLE objects as graphics, but can't edit them. The following table explains how OLE works with cross-platform networking in FileMaker Pro.

With this configuration	You can do this
A computer running Windows is the host and a computer running the Mac OS is the guest.	On a computer running the Mac OS, you can view embedded and linked objects as graphics.
A Mac OS–based computer is the host and a computer running Windows is the guest.	On a computer running Windows, you can embed, link, and edit objects. On a Mac OS–based computer, you view the objects as graphics.
Mac OS–based computers are host and guest.	When you use FileMaker Pro to open a database that has OLE objects, you view the objects as graphics.
Computers running Windows are host and guest.	Host and guests can embed, link, and edit objects.

- When you share a file with system formats that are different from the settings on your computer, you can choose which formats to use. See appendix B, "Working with international files."

Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ sharing files

Closing shared files

If you're a host, you can close the files you're hosting. If you're a guest, you can close your connections to shared files.

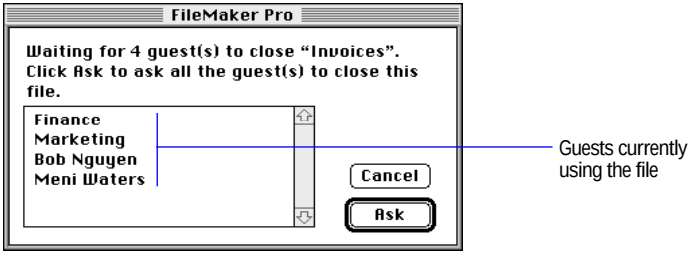
Important Leave FileMaker Pro by choosing Quit from the File menu. If you turn off your computer without quitting the program, you can damage open files and lose your changes.

1. Choose Close or Quit from the File menu.

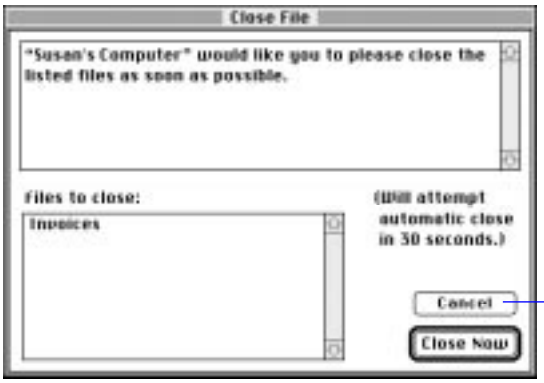
To	Do this
Close a shared file	Choose Close.
Quit FileMaker Pro	Choose Quit.

2. If you're a host and guests are connected, click Ask in the Ask dialog box.

   Note You see this dialog box whenever you perform a task that requires all guests to close their connections to the file. See "Working with shared files" on page 7-6.



Guests see a message asking them to close the file. If guests click Close Now, FileMaker Pro closes the file. If the guests don't respond to the message and the file can be closed safely, FileMaker Pro closes it in 30 seconds.


Close File
"Susan's Computer" would like you to please close the listed files as soon as possible.
Files to close:
Invoices
(Will attempt automatic close in 30 seconds.)
Cancel
Close Now
If a guest clicks Cancel, FileMaker Pro doesn't clos the connection to the file

Choose FileMaker Help Index from the ? or Help menu, and then type:

- files, closing

Protecting your files

When you share databases, you need a security system so that confidential data is protected and unauthorized changes aren't made. With FileMaker Pro, you protect files by defining *passwords* and *groups*. Passwords limit what users can do and groups limit the layouts and fields they can see. Both passwords and groups have *access privileges*:

- For passwords, access privileges limit a user's activities with a file. For example, one password might let users create and edit records, but another might only let them browse records.

  Passwords can also limit access to an entire file—if you don't know a password, you can't open the file.

- For groups, access privileges limit access to specific layouts and fields. For example, you can give the Sales group access to one set of layouts and fields and the Marketing group access to a different set, keeping each group's information private within the same database.

Passwords and groups are related. You can define a password for each employee in your company, and then associate passwords with groups to limit access to each department's data. For example, in a file containing employee information, only passwords in the Human Resources group can see salary information.

When you open a file with a password, FileMaker Pro knows:

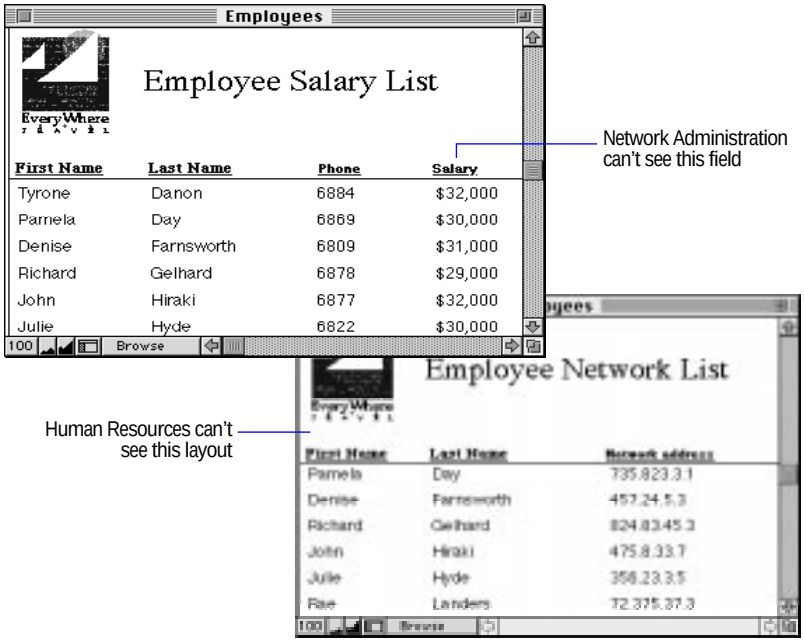
- activities you're authorized to do with the file
- groups associated with your password
- layouts and fields you can see

Important FileMaker Pro passwords work independently of operating system access privileges. Shared FileMaker Pro files can be available on your network even if you haven't shared them with your operating system's file sharing features. To restrict access to shared FileMaker Pro files, use FileMaker Pro passwords.

Note When you assign passwords to a database, those same passwords are required when opening the database over the Web, unless Web Security database passwords are in effect. For more Web-related password and access privilege options, see page 11-16, "Database security."

The following example shows two layouts for an Employees database. The Salary List layout displays data that is confidential (like salary) and data that everyone can see (like phone number). The Network List layout displays network addresses that only network administrators can access. The file has two groups, Human Resources and Network Administration.

Passwords in this group	Can do this
Human Resources	See and change any field on the Salary List layout. They can't see the Network List layout.
Network Administration	See (but not change) the names and phone numbers on the Salary List layout. They can't see the salaries. They can see and change any field in the Network List layout.



Define passwords or groups only if you need to protect information. If you only want to limit the tasks users can do and don't mind if they can see all fields and layouts, define passwords but don't define groups.

Choose FileMaker Help Index from the ? or Help menu, and then type:

- protecting database files

Defining passwords

When you define passwords for a file, you specify who can open the file and what tasks they can perform. When a user opens the file with a password, FileMaker Pro dims commands that aren't available for that password.

Keep these points in mind:

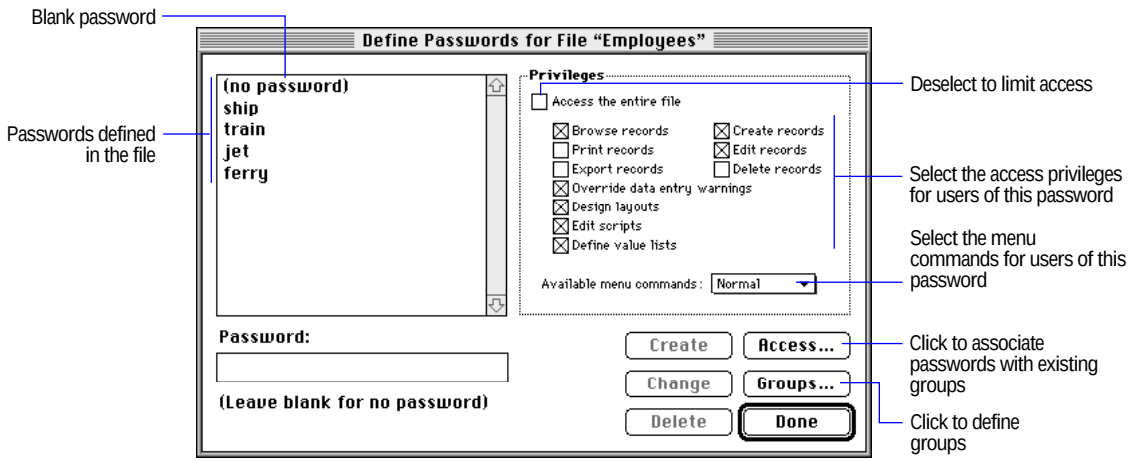
- If you define passwords, you must set at least one *master* password that gives access to the entire file.
- Make passwords easy to remember, but not so easy that someone can guess them. If you write down passwords, store them in a secure place away from your computer.

- You can define a blank password that gives all users limited access to a file. When users open the file, they can press Return at the password prompt to access the file.
- When you open a file, FileMaker Pro can try a password without prompting you. Define the password, and then see "Setting document preferences" on page 9-7 to set the option.
- If you create a script that opens a second file when your primary file opens, and both files have the same password, FileMaker Pro enters the password for the second file and opens it automatically—it does not prompt you for the second file's password. If you don't want this, specify a different password for the second file.
- You can protect all FileMaker Pro files, not just shared files on a network. For example, you can define a password so other users can't open a file on your computer.

To define passwords:

1. Open the file.
2. Choose Access Privileges from the File menu, and then choose Define Passwords.
3. In the Define Passwords dialog box, specify the password.

To	Do this
Define a password	Type up to 31 characters in the Password box. Passwords aren't case sensitive. If you type spaces, users must type them to open the file.
Define a blank password	Leave the Password box blank, and then select a limited set of privileges in the next step.



4. Select the activities that users with this password can perform.

Select	To let users with this password
Access the entire file	Perform any task with records, layouts, and scripts. This privilege creates a master password. It's the only privilege that can define or delete passwords, or change field definitions, document preferences, groups, or other users' passwords.
Browse records	See data in records. (Define groups to limit the fields and layouts that users can see.)
Print records	Print one or more records
Export records	Export one or more records, or copy the found set
Override data entry warnings	Enter data that doesn't fit the entry options. (See "Choosing data entry options" on page 2-7.)
Design layouts	Create or change layouts
Edit scripts	Create or change scripts
Define value lists	Create or change value lists
Create records	Create records and enter data in them
Edit records	Change the information in records
Delete records	Delete one or more records

5. Choose the menu commands that users with this password can access, and then click Create.

Select	To
Normal	Enable all menu commands associated with the privileges you selected in the previous step
Editing Only	Enable only basic data entry commands for the current file. (Available menu commands depend on the level of access you selected in the previous step.)
None	Disable all commands that work on the current file

Note All options let users switch between database windows, perform scripts on the Script menu, click buttons on layouts, open FileMaker Pro Help, change preference options (except Document Preferences), and open, create, or close FileMaker Pro files.

6. Repeat steps 3 through 5 for additional passwords.
7. Define groups or close the Define Passwords dialog box.

To	Do this
Create groups	Click Groups in the Define Passwords dialog box. At the prompt, type a master password, and then click OK to see the Define Groups dialog box. See step 3 in "Defining groups" on page 7-17.
Associate passwords with existing groups	Click Access in the Define Passwords dialog box to see the Access Privileges dialog box. See step 4 in "Defining groups" on page 7-18.
Close the Define Passwords dialog box	Click Done. At the prompt, type a master password, and then click OK.

Important After you define a master password, write it down and store it in a secure place. If you forget it, you can't regain full access to the file.

Choose FileMaker Help Index from the ? or Help menu, and then type:

- defining passwords

Deleting or changing passwords

To	Do this
Delete a password	Choose Access Privileges from the File menu, and then choose Define Passwords. Select the password in the Define Passwords dialog box, and then click Delete. In the confirmation dialog box, click Delete, and then click Done. When prompted, type the master password, and then click OK.
Change a password if you know a master password	Choose Access Privileges from the File menu, and then choose Define Passwords. Select the password in the Define Passwords dialog box. Edit the password, revise the privileges, and then click Change. Click Done. When prompted, type the master password, and then click OK.
Change your own password if you don't know a master password	Choose Change Password from the File menu. In the Change Password dialog box, type the old password. Type the new password, type it again to confirm it, and then click OK.

Keep these points in mind:

- Notify users if you change their passwords.
- If you change passwords while a file is shared, the changes don't take effect until guests close and reopen the file.

Choose FileMaker Help Index from the ? or Help menu, and then type:

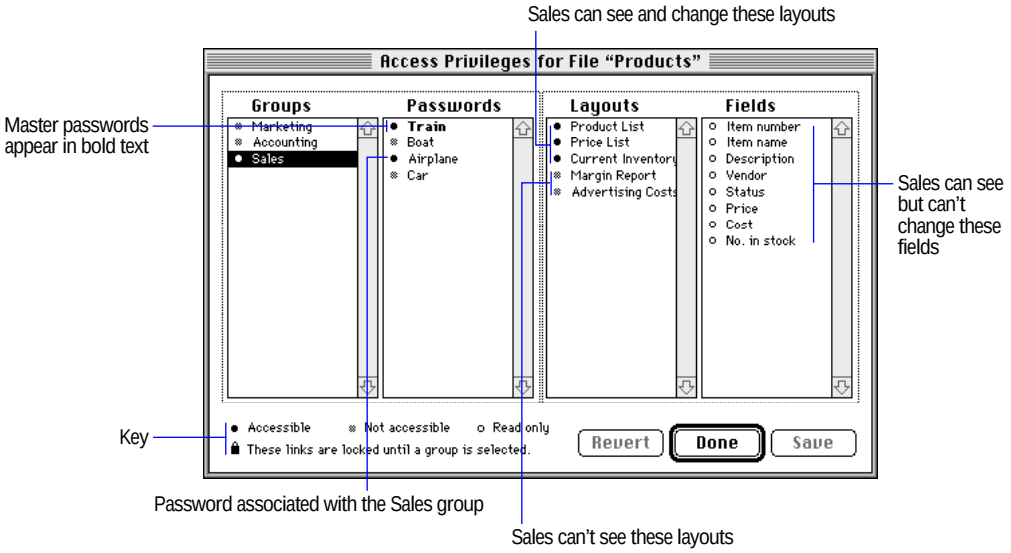
- deleting passwords
- passwords, changing

Defining groups

After you define passwords, define groups to restrict access to specific fields and layouts. You can:

- associate a group with more than one password. For example, you can assign separate passwords for each person in an accounting group. All users have access to the same layouts and fields (determined by the group), but only the managers can make changes to the file (determined by their passwords).
- associate the same password to more than one group. For example, to give an accountant access to the layouts and fields for the Sales and Inventory groups, associate the accountant's password with both groups.

The following illustration shows the access privileges for a file created by a Marketing department. The file has three groups: Marketing, Accounting, and Sales. When you select the Sales group, you see that the Advertising Costs layout is not available to Sales.



Tip To see the associations between layouts and fields, choose Access Privileges from the File menu, and then choose Overview. You must be the host and set the file to Single-User, or have all guests close the file. (See "Opening files as the host" on page 7-3.)

For example, if you want to delete a field but aren't sure which layouts will be affected, select the field in the Access Privileges dialog box. Layouts with solid bullets contain the selected field.

Before you define groups, consider these points:

- Groups give database administrators a way to manage user access to layouts or fields. Users don't need to know about groups. If you don't need to restrict access to layouts or fields, don't define groups.

- Define passwords before defining groups. (See “Defining passwords” on page 7-11.) Master passwords can access the entire file and aren’t associated with specific groups.
- You can limit what users can do with specific fields or layouts without changing the access privileges of their passwords. For example, if passwords associated with a group have Edit record privileges, you can prevent users from editing specific fields or layouts by setting the group access privileges to Not accessible.

To define groups:

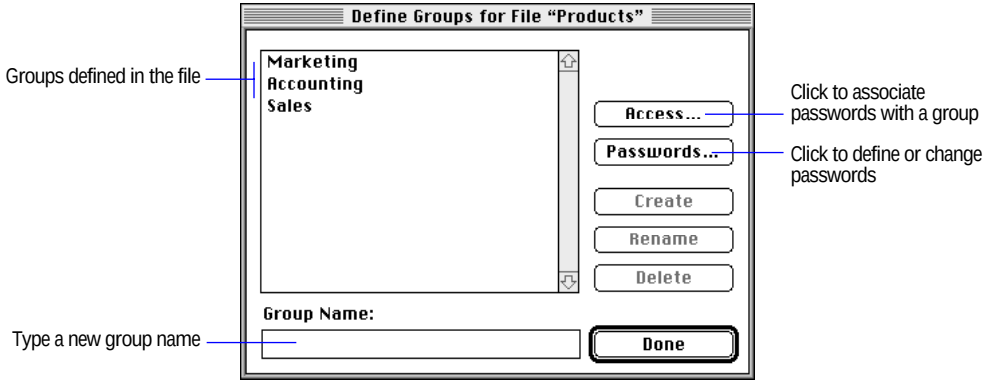
1. Open the file.

   You must use the master password. If the file is shared, you must be the host. (See “Opening files as the host” on page 7-3.)

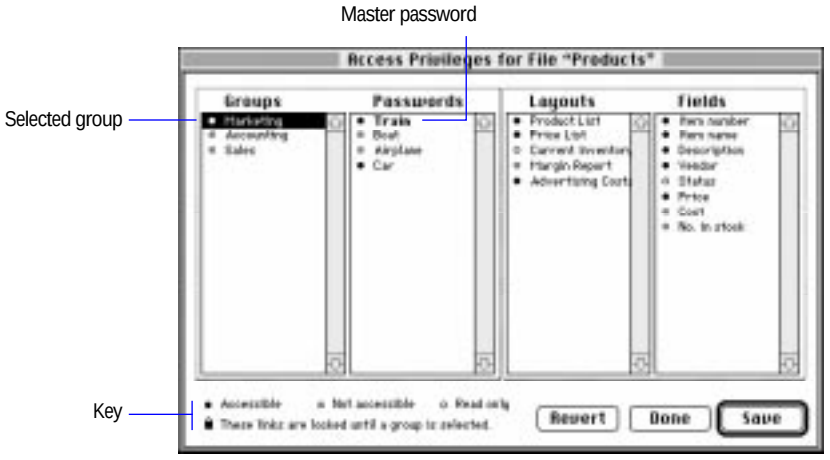
2. Choose Access Privileges from the File menu, and then choose Define Groups.

   If the file is shared and guests are connected, ask them to close the file. (See step 2 in “Closing shared files” on page 7-8.)

3. In the Define Groups dialog box, type the group name, click Create, and then click Access.



4. In the Access Privileges dialog box, select a group.



5. Associate passwords for the group by clicking bullets next to the passwords.

   Click the bullets, not the names of the passwords. A solid bullet indicates that the group can use the password.

6. Set the access privileges for layouts and fields by clicking the bullets next to them.

   Click the bullets, not the layout or field names.

7. Click Save to save the current settings, or click Revert to return the settings to the way they were last saved.

8. Click Done, and then click Done again.

Choose FileMaker Help Index from the ? or Help menu, and then type:

- groups

Deleting or changing groups

To delete or change groups, you must have the master password, be the host, and set the file to Single-User (or have all guests close the file). See “Opening files as the host” on page 7-3 and “Closing shared files” on page 7-8.

To	Do this
Delete a group	Choose Access Privileges from the File menu, and then choose Define Groups. In the Define Groups dialog box, select the group name and then click Delete. In the confirmation dialog box, click Delete and then click Done.
Change password associations or access privileges for a group	Choose Access Privileges from the File menu, and then choose Overview. In the Access Privileges dialog box, select a group. Click the bullets next to the passwords, layouts, and fields you want to change. Click Save, and then click Done.

Choose FileMaker Help Index from the ? or Help menu, and then type:

- groups

Chapter 8: Importing and exporting data

You can exchange information with FileMaker Pro files or with files created in other applications. This chapter describes the import and export features of FileMaker Pro.

Note You cannot import or export data from your database using a Web browser.

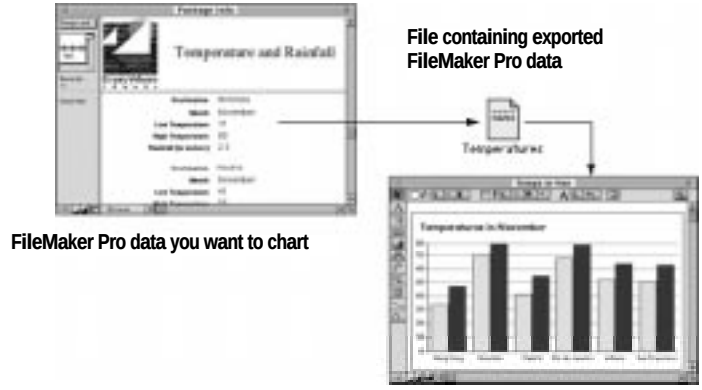
Important Before you read this chapter, be sure you know how to use FileMaker Pro Help, as explained in the preface, “Getting help.”

Understanding import and export

With FileMaker Pro, you can:

- *import* — bring data from another file into a FileMaker Pro file
- *export* — save FileMaker Pro data in a format you can open in another application

For example, suppose you have a FileMaker Pro database that contains temperature and rainfall data for many travel destinations. To create a chart for a travel seminar, you export the temperature data from FileMaker Pro, and then open the exported file using ClarisImpact software or Microsoft Excel. Exporting the data is faster and more accurate than retyping it in another application.



FileMaker Pro data you want to chart

Data displayed in ClarisImpact

Keep these points in mind:

- To exchange small amounts of data between files (for example, a few records), use Copy and Paste, or drag and drop. See "Copying and moving values and records" on page 4-13 and "Using drag and drop to move information" on page 4-14.

  To quickly exchange larger amounts of data, import or export records.
- You can define FileMaker Pro scripts to exchange information with other files. See chapter 5, "Using ScriptMaker and buttons."
- You can import data into (or export from) shared FileMaker Pro files. See chapter 7, "Networking and access privileges."

  When you exchange information between FileMaker Pro files on a Mac OS–based computer and a Windows–based computer, you may see differences in filenames and character set mapping.
- You can't import or export layouts from one FileMaker Pro file to another, but you can:
  - copy and paste objects from one layout to another
  - copy layouts and field definitions (but no data) to a new FileMaker Pro file by saving a clone of the file. See "Saving a copy of a file" on page 1-11.
  - copy fields to a layout in another file if the field names are identical in both files. See chapter 3, "Laying out and arranging information."
- For information about importing or exporting data in related files, see "Working with related records" on page 10-32.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- exporting data
- importing data

Understanding file formats

Every application uses a *file format*, the organization of information within a file. The following table describes the file formats that FileMaker Pro supports. For more information about the formats, see FileMaker Pro Help.

Format	Use to
FileMaker Pro	Import data from a FileMaker Pro 2.0, 2.1, 3.0 or 4.0 file, or export to another FileMaker Pro 3.0 or 4.0 file
Tab-Separated Text	Exchange data with most applications, including ClarisImpact. If you aren't sure which format to use, try Tab-Separated Text
Comma-Separated Text	Exchange data with BASIC programs, and applications like ClarisImpact. This format is also called Comma-Separated Values (CSV)
SYLK	Exchange data with many spreadsheet applications
DIF	Exchange data with spreadsheet programs, like VisiCalc
WKS	Exchange data with Lotus 1-2-3
BASIC	Exchange data with Microsoft BASIC programs
Merge	Create personalized documents like form letters. For example, in MacWrite Pro you can combine variable data (like names and addresses) in a Merge file with text in a main document. The FileMaker Pro Merge file is equivalent to a MacWrite Pro Merge data file
HTML Table	Save data as an HTML table for use on a Web page
Edition File	Publish an Edition file, which users can subscribe to from any application that supports the Edition Manager. Whenever you export the file, subscribers are automatically updated
ClarisWorks 2.0/3.0/4.0	Import data from ClarisWorks 2.0 through 4.0 database files
DBF	Exchange data with dBASE III and dBASE IV
Excel	Import data from Microsoft Excel 4.0 through 5.0

Keep these points in mind:

- If you're exchanging data with another application, check the documentation to determine the file formats it supports.
- Most file formats don't support importing or exporting text attributes (font, size, or style). In these cases, FileMaker Pro imports or exports the text but not the attributes.

- Some formats don't support repeating fields. See "Exporting repeating field data" on page 8-14.
- To exchange data in ClarisWorks or DBF formats, the FileMaker Extensions folder must be installed in the FileMaker Pro application folder. See the *FileMaker Pro Installation and New Features Guide* for more information.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ file formats

Importing data into FileMaker Pro

You can import data into a new or existing FileMaker Pro file.

To	Do this
Import data into an existing FileMaker Pro file	See the following section
Import data from another application into a new FileMaker Pro file	See "Importing data into a new file" on page 8-9.

Keep these points in mind:

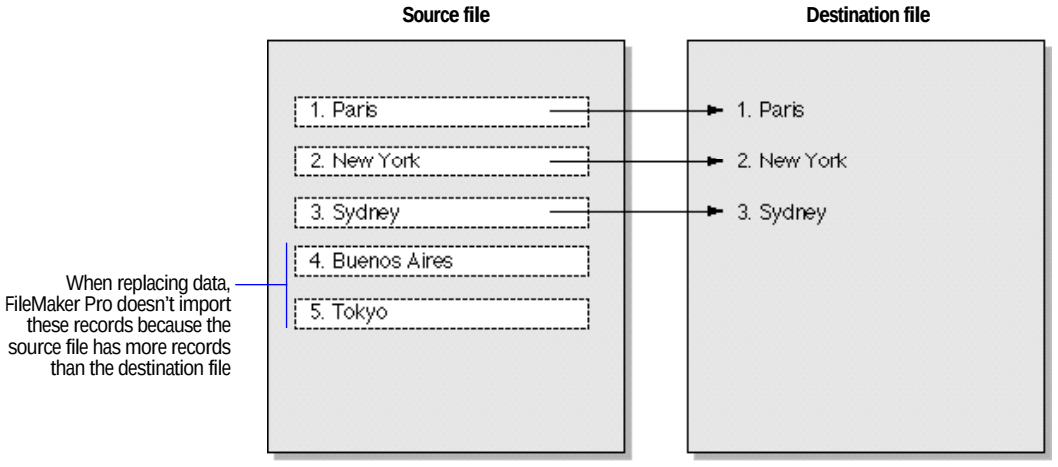
- The file you're importing from must be in one of the formats listed in "Understanding file formats" on page 8-3.
- FileMaker Pro imports data in the order it appears in the file you're importing from.
- You can import data from any field type into any compatible field except container, calculation, summary, and global fields. You can import container fields if you're importing from another FileMaker Pro file.
- To insert graphics, sounds, or QuickTime movies into your file, see "Working with container fields" on page 4-6.

Importing data into an existing file

You can import data into an existing FileMaker Pro file from another FileMaker Pro file, or from another application. You choose whether FileMaker Pro adds or replaces records in the file you're importing into:

- The Add new records option copies all records to the end of the file you're importing into.

- The Replace data in current found set option replaces records in the file you're importing into. The following figure illustrates this option.



To import data into an existing file:

1. If you're replacing records, make a backup copy of the file you're importing into.
2. If you're importing records from a FileMaker Pro file, open the file, and then browse the records you want to import.

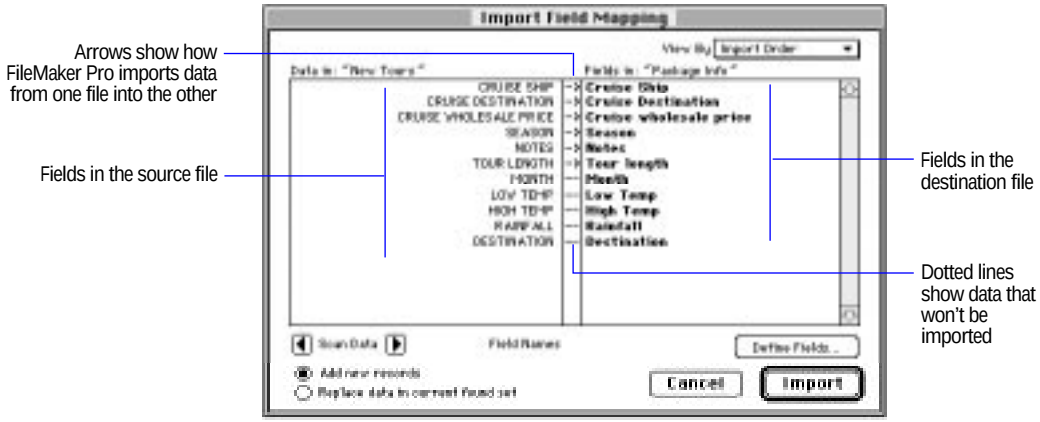
   FileMaker Pro imports the records in the found set in the order they're sorted. Use Find, Omit, Omit Multiple, or Sort, if needed.
3. Open the FileMaker Pro file you want to import records into.

   If you're replacing records in the file, use Find, Omit, or Omit Multiple to browse the records you want to replace. Sort the records in the same order as records in the file you want to import.
4. In Browse mode, choose Import/Export from the File menu, and then choose Import Records.
5. In the dialog box, select the name of the file to import, and then click Open.

   For Show, choose a file type to narrow the choices, or choose All Available to see all the files you can import.
6. In the Import Field Mapping dialog box, match the fields you want to import.

Important Check each arrow and field name to be sure the correct data moves into the correct fields.

To	Do this
Change the order of fields in the Fields in list	Choose an option from the View By pop-up menu. (Options change the order by which you view fields in the dialog box, not the order of the fields in the file.) To list the fields by: ▪ names that match, choose Matching Names ▪ the order used the last time FileMaker Pro imported data into this file, choose Last Order ▪ the order the fields were created, choose Creation Order ▪ name in alphabetical order, choose Field Names ▪ the types of fields, choose Field Types ▪ a custom order (created by dragging field names), choose Import Order
Change the order of one field in the file you're importing into	Move the pointer over a field name in the Fields in list. When the pointer changes to a double arrow, drag the name to a new location. This changes the order you view fields in the dialog box, not the order of the fields in the file
Prevent data from being imported	Click the arrow between the field names. The arrow changes to a dotted line
View the data in the file you're importing from	Click the Scan Data arrows to see the data in each record
Create a field in the file you're importing into	Click Define Fields. In the Define Fields dialog box, create the field, and then click Done. (See "Defining database fields" on page 2-3.) If you're importing into a shared file, only the host can create fields
Change or delete a field in the file you're importing into	Click Define Fields. In the Define Fields dialog box, make your changes, and then click Done. (See "Changing field definitions" on page 2-26.) If you're importing into a shared file, only the host can change or delete fields


Arrows show how FileMaker Pro imports data from one file into the other
Fields in the source file
Fields in the destination file
Dotted lines show data that won't be imported
Import Field Mapping
Cancel
Import

7. Select an option to add or replace records, and then click Import.

To	Do this
Add new records to the end of the file you're importing into	Select Add new records
Replace existing data in the file you're importing into	Select Replace data in current found set. FileMaker Pro replaces field values in the found set of the file you're importing into

8. If you see the Import Options dialog box, select options, and then click OK.

FileMaker Pro displays this dialog box if your file has lookups or fields that automatically enter data, or if you're importing data from a FileMaker Pro file with repeating fields and select the Add new records option.

To	Do this
Enter default data into fields that are defined with Auto Enter options or as lookups	Select Perform auto-enter options while importing After importing data, FileMaker Pro enters default data into fields with Auto Enter options. Some Auto Enter options (like modification date, time, and name, and lookups) overwrite the imported data. (See "Choosing data entry options" on page 2-7 and "Defining a lookup" on page 10-11.)

To	Do this
Import data into repeating fields	▪ Select Keeping them in the original record to import the records as repeating fields. ▪ Select Splitting them into separate records to place each repeating value in a separate record. For example, choose this option to split line items on an invoice – if you have five repeating values, you get five separate records. Each separate record is identical except for the repeating field values. You can then sort the newly separated items, or total them using a summary field

Import Options
Perform auto-enter options while importing
(modification date, serial number, lookups, etc.)
Import values in repeating fields by:
Keeping them in the original record
Splitting them into separate records
Cancel
OK

Keep these points in mind:

- The records you import become the found set. After importing, check the data in the found set.
- If you select the Replace data in current found set option, be sure your records are correct before discarding the backup copy of the file.
- FileMaker Pro doesn't validate imported data.

  To stop importing, press Command-period. To delete the records already imported, choose Delete All from the Mode menu.

  Important If you delete the found set after using the Replace data in current found set option, you delete your original found set (which might be all your data).

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ importing data

Importing data into a new file

You can bring data from another application into a new FileMaker Pro file with one Standard layout and one columnar report. Every record is copied into the new file.

1. In FileMaker Pro, choose Open from the File menu.
2. In the dialog box, select from the pop-up menu the type of file you want to import, select the file from the list, and then click Open.
3. In the Name converted file dialog box, type a name for the new file, select a location, and then click Save.

   FileMaker Pro creates a text field called f*x* for each field in the new file, where *x* is 1, 2, 3, and so on, until all fields are named.

   Note If you're importing from a format that contains the field names (like DIF), FileMaker Pro uses the names instead of f*x*.

   Some formats (including ClarisWorks and DBF) create number, date, and time field types in addition to text.

   If you are importing a Microsoft Excel file which contains more than one worksheet, FileMaker Pro displays the Select Worksheet dialog box from which you can select the worksheet that you want to import.

To stop the import, press Command-period. You can delete the records already imported by choosing Delete All from the Mode menu.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ importing data

Exporting data from FileMaker Pro

You can export FileMaker Pro data to a new file, and then open it in another application.

Keep these points in mind:

- To use an exported file, open an application that can read the file format, and then open the file. See "Understanding file formats" on page 8-3 for file formats you can export.
- You can export data in container fields to FileMaker Pro format.

- Use the procedure in this section to export summary data. To export subsummary data, see "Exporting subsummary data" on page 8-12.
- To export repeating field values to SYLK, WKS, or DBF formats, see "Exporting repeating field data" on page 8-14.
- For information about exporting data from related files, see "Working with related files and fields" on page 10-30.
- You can't export data from a FileMaker Pro file to a remote database, like SQL Server.

To export data:

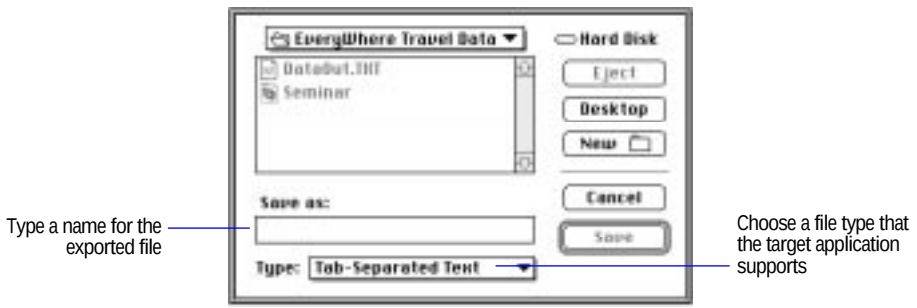
1. Open the FileMaker Pro file and browse the records you want to export.

   Use Find, Omit, or Omit Multiple to create a found set.

2. Sort the records in the order you want them exported.
3. In Browse mode, choose Import/Export from the File menu, and then choose Export Records.

   In the dialog box, type a name, and then select a location for the file.

   Important If another file with the same name already exists, FileMaker Pro replaces the file.



4. Choose a file type from the Type pop-up menu, and then click Save.
5. In the Export Field Order dialog box, change the field order as needed.

To	Do this
Export fields	Double-click a field to move it to the Field Order list. To export all fields, click Move All

To	Do this
Export fields from a related file	Choose a relationship from the Relationship pop-up menu, and then move fields to the Field Order list. (See "Understanding relationships" on page 10-9.)
Prevent data from being exported	Select a field in the Field Order list, and then click Clear. To move all fields out of the list, click Clear All
Change the export order	In the Field Order list, drag the double arrow for the field name

6. Select a format option for the fields, and then click Export.

Suppose the current layout has a number field that's formatted to display two decimal digits and a currency symbol ($). When you enter 3.7 into the field, FileMaker Pro displays $3.70 in Browse mode. You can export the value with or without the formatting.

To export	Select this option
Unformatted values (for example, 3.7)	Don't format output
Values with the number, date, and time formats from the current layout (for example, $3.70)	Format output using current layout. Symbols and other non-numeric values are exported as text. You can't select this option for SYLK, DBF, or DIF formats

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- exporting data

Exporting subsummary data

When you export subsummary data, you must specify how to sort and summarize the records.

Note To export summary data, see the previous section.

1. Open a FileMaker Pro file and browse the records you want to export.

   Use Find, Omit, or Omit Multiple, if needed.

2. Sort the records in the order you want them exported.

   Sort on the break field (the field that groups the records), and then switch to Preview mode to verify the subsummary results. (See " Adding a summary part" on page 3-30 and "Sorting by summary fields" on page 4-34.)

3. In Browse mode, choose Import/Export from the File menu, and then choose Export Records.

4. In the dialog box, type a name, and then select a location for the file you're exporting to.

   Important If another file with the same name already exists, FileMaker Pro replaces the data in it.

5. Choose a file type from the Type pop-up menu, and then click Save.

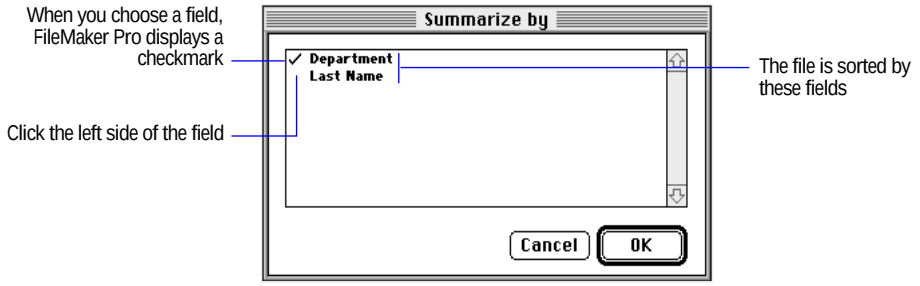
6. In the Export Field Order dialog box, select the fields to export.

   For information about the Export Field Order dialog box, see step 5 in "Exporting data from FileMaker Pro" on page 8-10.

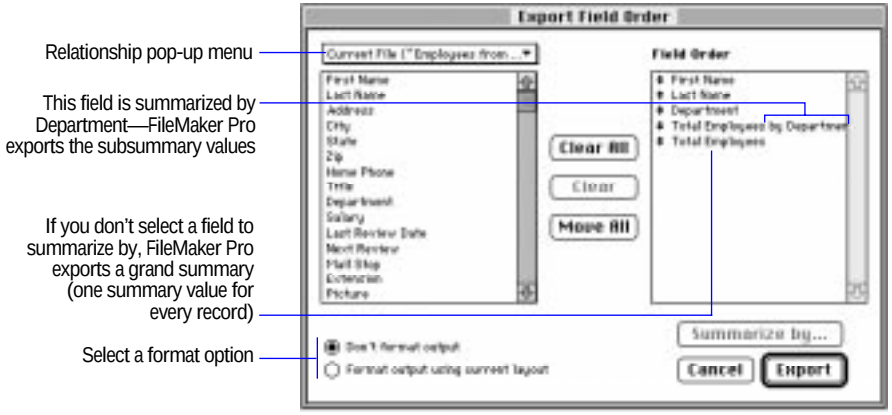
7. To export subsummary values, select a summary field in the Field Order list, and then click Summarize by.

8. In the Summarize by dialog box, choose one or more fields to summarize by.

   Move the pointer to the left of the field name, and then click to choose it.



9. Click OK.


Relationship pop-up menu
This field is summarized by Department—FileMaker Pro exports the subsummary values
If you don't select a field to summarize by, FileMaker Pro exports a grand summary (one summary value for every record)
Select a format option
Export Field Order
Field Order
Clear All
Clear
Move All
Summarize by...
Cancel
Export

10. Repeat steps 7 through 9 to export additional subsummary values that are sorted by the same break field.

Repeat steps 2 through 9 to export subsummary values that are sorted by other break fields.

11. Select a format option for the fields, and then click Export.

12. See step 6 on page 8-11 in "Exporting data from FileMaker Pro."

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- subsummaries

Exporting repeating field data

Some file formats (like SYLK, WKS, and DBF) can only interpret one value per cell or field. When FileMaker Pro exports to these formats, it exports only the first value in a repeating field. To export all repeating field values, split the fields into separate records.

1. Make a clone of the file you want to export.

   See "Saving a copy of a file" on page 1-11.

2. Open the clone, and then import the data from the original file.

   See "Importing data into an existing file" on page 8-4.

3. When you see the Import Options dialog box, select Splitting them into separate records, and then click OK.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ repeating fields

Chapter 9: Customizing FileMaker Pro

You can customize FileMaker Pro by setting preferences for the application, for individual files, or for working with files on the Web. This chapter explains the preference options.

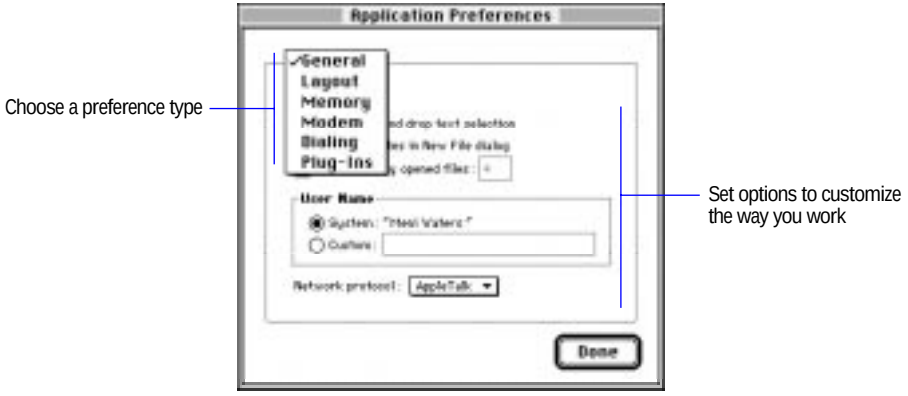
Important Before you read this chapter, be sure you know how to use FileMaker Pro Help, as explained in the preface, “Getting help.”

Setting application preferences

Application preferences apply to any file you open. Preferences remain in effect until you change them.

To set application preferences:

1. Open a FileMaker Pro file.
2. Choose Preferences from the Edit menu, and then choose Application.
3. In the Application Preferences dialog box, choose a preference from the pop-up menu, and then set the options.



Choose FileMaker Help Index from the ? or Help menu, and then type:

- setting application preferences

Setting general application preferences

In general application preferences, you set options for dragging and dropping text, displaying template files, and the number of previously opened files that are listed in the File menu. You can also specify your user name and network protocol.

Do this	To
Select Enable drag and drop text selection	Use drag and drop to transfer text without using the Clipboard
Select Show templates in New File dialog	Display a list of template files when you start FileMaker Pro or choose New from the File menu
Select Recently opened files	Display recently opened files in the File menu. You can also select how many files appear in the menu, up to a maximum of nine files
For User Name, select Custom, and then type a name in the text box	Specify a custom user name. If you don't specify a custom name, FileMaker Pro uses the System user name from the Chooser or the Sharing Setup control panel
Choose a network from the Network protocol pop-up menu	Select a network connection. Changes to this setting don't take effect until you quit FileMaker Pro, and then start it again

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- general preferences

Setting layout preferences

In layout preferences, you set options for the way you like to work in Layout mode.

Select	To
Always lock layout tools	Keep a layout tool selected until you select a different one or press Enter. If you don't select this option, FileMaker Pro returns to the arrow pointer after you use a tool
Add newly defined fields to current layout	Add new fields to the current layout when you define them
Create rounded buttons	Create buttons with rounded corners using the button tool
Create rectangular buttons	Create rectangular buttons using the button tool

Choose FileMaker Help Index from the ? or Help menu, and then type:

- layout preferences

Setting memory preferences

Changes you make to FileMaker Pro files are stored in an area of RAM called the *cache*, and are saved periodically to the hard disk. In memory preferences, you choose when FileMaker Pro saves your changes.

Setting preferences for dialing phone numbers

Modem and dialing preferences affect the way FileMaker Pro dials phone numbers. To dial phone numbers:

1. Define a script that includes the Dial Phone step.

   Dial Phone specifies which phone numbers to dial. See chapter 5, "Using ScriptMaker and buttons."

2. Specify modem and dialing preferences.

   See the following sections.

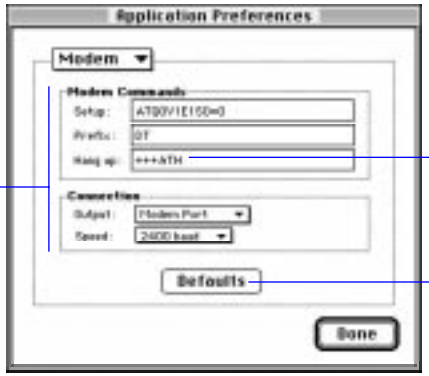
3. Perform the script.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- Dial Phone script step
- scripts, overview
- setting preferences

Setting modem preferences

For information about the settings you should use, see the documentation that came with your modem.



For	Do this
Setup	Type the command (all uppercase or all lowercase) to initialize your modem
Prefix	Type the command (all uppercase or all lowercase) for starting a call
Hang up	Type the command (all uppercase or all lowercase) for disconnecting a call
Output	Choose a port from the pop-up menu. If you choose Speaker, you don't have to set the other modem preferences
Speed	Choose a *baud rate* (the speed for transmitting data between your computer and the modem) from the pop-up menu

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- modem preferences

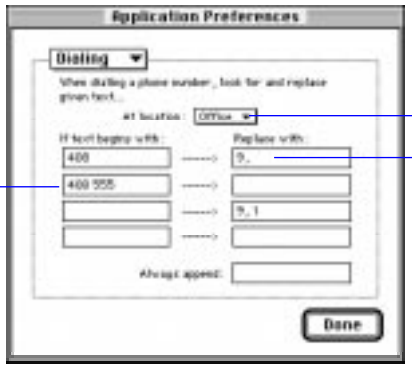
Setting dialing preferences

You can store a phone number in your database and set FileMaker Pro dialing preferences to dial it in different ways.

Note FileMaker Pro uses these preferences when you select the Use Dialing Preferences option in the Dial Phone script step.

The following example shows dialing preferences for an office. When dialing another extension in the same office, you might not want to dial the exchange. And when dialing a number outside the office, you might need to dial a prefix for a local area code, or several prefixes for a long-distance call.

FileMaker Pro matches the text in the left column of the Dialing Preferences dialog box with the phone number in your database. When it finds the longest matching entry in the left column, it dials the corresponding entry in the right column. In this example, if the number in your database is 408 555-3930, FileMaker Pro dials 3930.



This is the longest entry that matches the example phone number

Set preferences for different locations

With most modems, include a comma for a two-second delay

For	Do this
At location	Choose a location from the pop-up menu
If text begins with	Type the digits that you don't want FileMaker Pro to dial at the beginning of a phone number
Replace with	Type the digits that you want FileMaker Pro to dial before a phone number
Always append	Type the digits that you want FileMaker Pro to dial after a phone number

Note Some modems won't accept more than 32 characters, so be careful when inserting or appending long numbers.

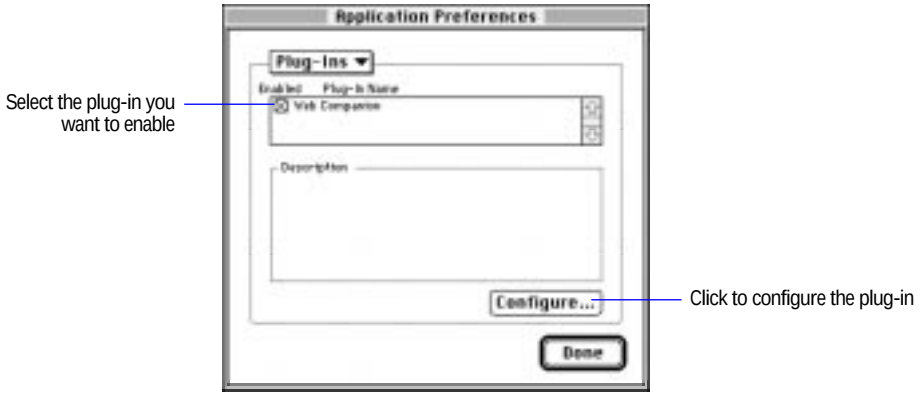
? Choose FileMaker Help Index from the ? or Help menu, and then type:

- Dial Phone script step
- phone dialing preferences

Setting up plug-ins

A plug-in is a file that adds features to FileMaker Pro. In plug-ins preferences you can set options for these plug-ins. Select the checkbox next to the plug-in you want to work with, then click Configure. If the checkbox is already selected, click the plug-in name to highlight it, then click Configure.

See chapter 11 for more information on using FileMaker Pro Web Companion.



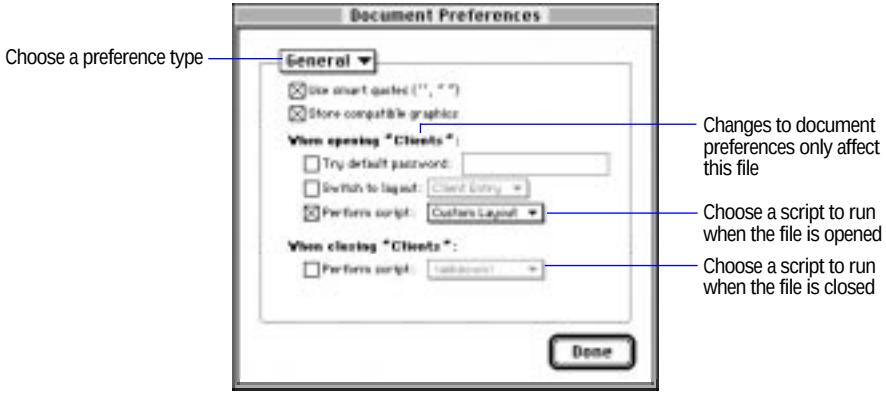
Setting document preferences

Document preferences affect the current database file. You can set different document preferences for different files.

Note A shared file has the same document preferences for every user. You can change the document preferences if you have the master password or if there isn't password protection in the file. See "Defining passwords" on page 7-11.

To set document preferences:

1. Open a FileMaker Pro file.
2. Choose Preferences from the Edit menu, and then choose Document.
3. In the Document Preferences dialog box, choose a preference type from the pop-up menu, and then set the options.


Choose a preference type
Document Preferences
General
Changes to document preferences only affect this file
Choose a script to run when the file is opened
Choose a script to run when the file is closed
Done

Select	To
Use smart quotes	Use curly apostrophes (') and quotation marks (" "). If you use a font that doesn't have smart quotes, FileMaker Pro substitutes plain marks (' "). When you change this option, FileMaker Pro uses the new setting when you type in the file (existing marks do not change). If you deselect this option, FileMaker Pro uses plain marks
Store compatible graphics	Store graphics in a cross-platform format. You can deselect this option to conserve disk space. Changing this option affects only the objects you create after the change
Try default password, and then type a password	Automatically enter a password when you open the file. If the password isn't valid, FileMaker Pro prompts you to type another password. To temporarily bypass the default password and enter a different one, press Option while opening the file
Switch to layout, and then choose a layout from the pop-up menu	Display the specified layout when you open the file. If you don't select this option, FileMaker Pro opens the layout you displayed when you closed the file, or opens a layout you specify in a startup script. (See the Perform script option below)
Perform script, and then choose a name from the pop-up menu	Perform a startup or close script when you open or close the file. For example, you can define a startup script to hide the status area or set the window size. If another script opens the file, FileMaker Pro doesn't perform the startup script

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- document preferences

Setting document spelling preferences

You can choose to have FileMaker Pro check your spelling as you type. You can also define where the Spelling dialog box appears onscreen. For more information on setting spelling preferences, see page 1-20, “Checking your spelling as you type.”

Setting Web Companion preferences

In Web Companion preferences, you set options for FileMaker Pro records that are published on the Web. You can set options for Table View, Form View, searching, and sorting.

To set Web Companion preferences, choose Preferences from the Edit menu, and then choose Web Companion.

For more information on setting preferences for FileMaker Pro Web Companion, see page 11-3, “Setting up FileMaker Pro Web Companion.”

Chapter 10: Using data from related files

There are times when one database file doesn't suit all your data management needs. Perhaps you have data in one file that you want to use in another file. Or you've tried to expand a file by adding several fields to it, and now the file's subject has become unclear. Or you have the same values in several files, and you're constantly updating them to keep them all the same. With FileMaker Pro, you can access data from other files to use in the current file, by either defining lookups or creating a relational database. This chapter explains how.

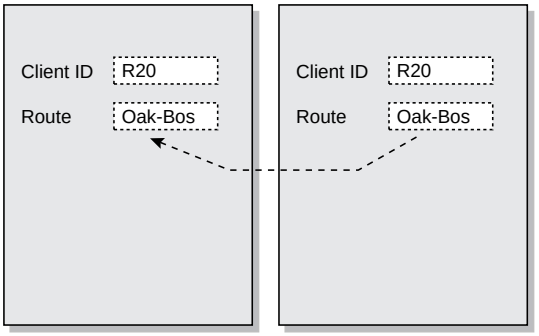
Important Before you read this chapter, be sure you understand how to create a FileMaker Pro file (see chapter 2, "Creating a database file"). You should also know how to create a layout and work with data (see chapter 3, "Laying out and arranging information," and chapter 4, "Working with information in records"). In addition, be sure you know how to use FileMaker Pro Help, as explained in the preface, "Getting help."

Looking up and displaying data from other files

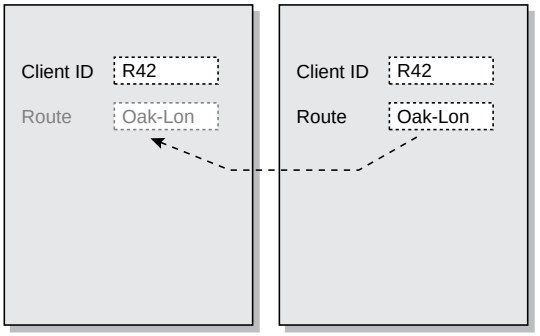
When you have data in one file that you want to use in the current file, you can access, display, and work with that data in two ways:

- A *lookup* copies data from another file into a field in the current file. After data is copied, it becomes part of the current file (as well as existing in the file it was copied from). Data copied to the current file doesn't automatically change when the values in the other file change.
- A *relational database* allows data from another file to be displayed, edited, and used in the current file, without having it copied to the current file. The data is always part of the other file only. Data displayed in the current file changes whenever the values in the other file change.

To establish a connection between files for lookups and relational databases, you define a *relationship*, an expression that tells FileMaker Pro how to match records in one file with records in another. Then you choose the fields that contain the data you want to work with.



A lookup copies data from another file into the current file, in a field that belongs to the current file



In a relational database, data from another file is displayed in the current file, in a field that belongs only to the other file

Note All files involved with lookups and relational databases must be FileMaker Pro 3.0 or 4.0 files.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- data from other files

Understanding the terminology

Before you begin, you need to understand the following terms for lookups and relational databases. These terms are illustrated in the sections that follow.

This term	Means
Master file	For lookups, the file that contains the copied data. It's the file the lookup originates *from* and the file the data is copied *to* For relational databases, the file that accesses and displays data from another file
Related file	For lookups, the file that contains the data to copy. It's the file the lookup goes *to* and the file the data is copied *from* For relational databases, the file that contains the data you want to access and work with in the master file A related file and the master file can be the same file

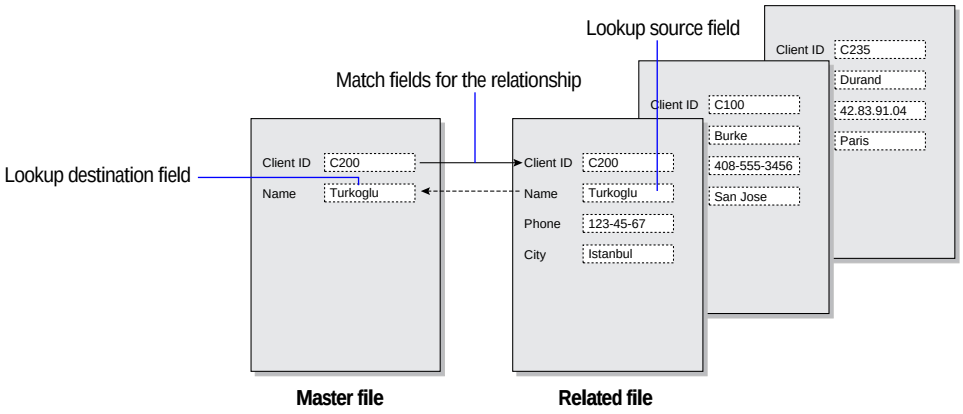
This term	Means
Match fields	A field in the master file and a field in the related file that contain values you want to use to find matching records. (A match field is sometimes called a *key field*) For lookups, the values in the match fields don't have to be equal to each other. For example, you can set an option to copy the next lower value when the match fields aren't equal For relational databases, the values in the match fields must be equal to each other
Lookup source field (for lookups only)	A field in the related file that contains the data you want to copy. It's the field the data is copied *from*
Lookup destination field (for lookups only)	A field in the master file that you want to contain the copied data. It's the field the data is copied *to*
Relationship	An expression you define that contains requirements which, when met, establish a relationship between values in the match fields. (A relationship is sometimes called a *link* or a *join expression*)
Related record	A record in the related file whose match field (according to the relationship used) contains a value that's equal to the value in the match field of the master file
Related field	A field in the related file that contains data you want to access and work with in the master file. After a relationship has been established between data in the match fields, the data in a related field can then be used in the master file You place a related field in a layout of the master file, either by itself or in a *portal*. You can then work with the related data in all modes In the master file, a related field name appears as *Relationship name::Related field name* or as *::Related field name*
Portal	An object in a layout of the master file in which you can place related fields. Use a portal when you want to access and work with data from more than one related record in records of the master file You only need to place related fields in a portal if you want to work with data from more than one related record. Portals display data from related records in rows, one record in each row

Understanding lookups

You look up data by first setting up a relationship between matching data in the master file and a related file, and then defining a lookup to copy data from a field in the related file into a field in the master file.

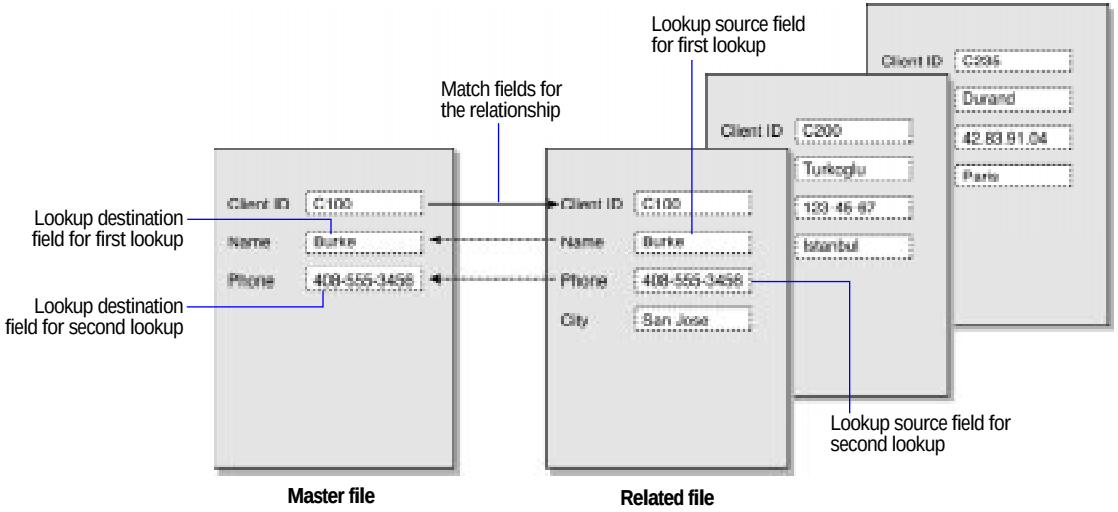
When you type a value in the match field of the master file, FileMaker Pro uses the relationship to find the first record in the related file whose match field contains a matching value. Next, it copies the value from the lookup source field into the lookup destination field, where the value is then stored. Data that's copied into the master file doesn't change when the value in the related file changes, unless the match field in the master file is changed. In that case, the lookup will be performed again.

After a value is copied into the lookup destination field, you can edit, replace, or delete it like any other value. You can also update data in the master file to match data that changed in the related file. (See "Updating lookup values" on page 10-14.)



Keep these points in mind:

- When the same value exists in more than one match field in the related file, FileMaker Pro copies data from only the first related record.
- When you type data in the match field of the master file, you might be asked to type a password for the related file.
- To copy data into a second field that uses the same match fields—for example, to copy a name and telephone number based on a matching client identification number—define a lookup for the second field, and use the same relationship as the first field.



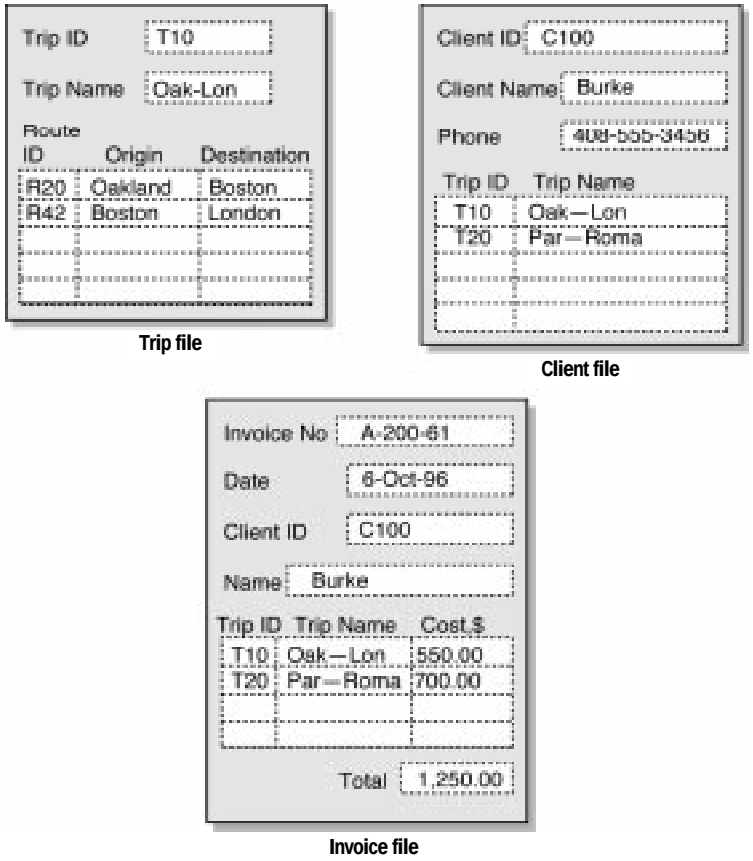
? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- lookups, overview

Understanding relational databases

A *relational database* is a group of two or more discrete database files that, when used together, contain all the data you need to do your work. In a relational database, each occurrence of data is stored in only one file at a time, but you can access and work with that data from any file.

For example, a travel agency might store trip information in a Trip file, and then use it with client information in a Client file and with billing information in an Invoice file.



Trip file

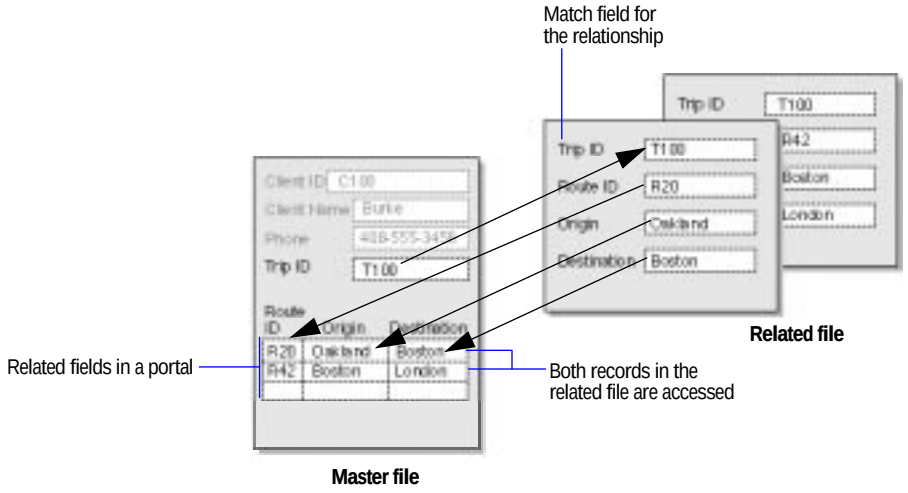
Client file

Invoice file

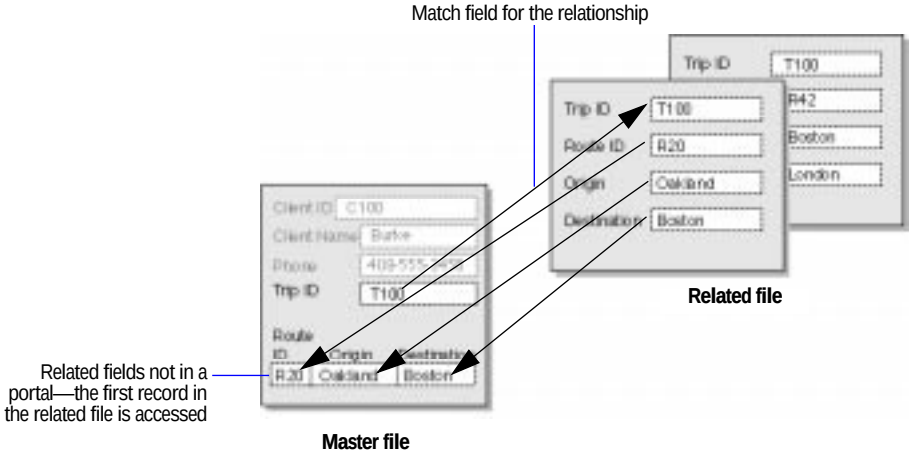
You create a relational database by first defining a relationship in the master file. Then you add the fields to display the data from the related file in a layout of the master file. You can then work with the data in the related fields in all modes when you work with records in the master file.

When you type a value in the match field of a record in the master file, FileMaker Pro uses the relationship to find all the records in the related file whose match field contains the same value. Then it accesses data from the fields of the related file in the current record of the master file. When the related field is in a portal, values from all related records are accessed.

Note You do not need to place related fields in a portal unless you want to work with data from more than one related record.


Match field for the relationship
Related fields in a portal
Both records in the related file are accessed
Related file
Master file

When the related field isn't in a portal, the value from the first related record is accessed.


Match field for the relationship
Related fields not in a portal—the first record in the related file is accessed
Related file
Master file

Because data from a related file is displayed in—and not copied into—the master file, you always see the data in its current state.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- relational databases

Lookups and relational databases: a comparison

Whether you define a lookup or create a relational database depends on how you plan to use the data from another file. Use the following information to help you decide.

Use lookups to:

- Copy data from a different file (or the current file) and keep it as copied. For example, use a lookup to copy values from a Current Price field to a Price field in an invoice file. Even if the price in the original file changes, the value in the invoice file stays the same.
- Maintain a file that already contains lookups, when you don't want to change the files to a relational database.

Use a relational database to:

- See and work with data in its most up-to-date state. This is important when you need current data, like values in a Days Past Due field from a related file.
- Set up and manage data efficiently and with flexibility. Instead of creating many database files that together store multiple occurrences of data, you store single occurrences of values in smaller files. You can then work with the data in many ways. You make any changes to data in only one place, which promotes data accuracy.
- Save disk space, because data is stored in only one place.

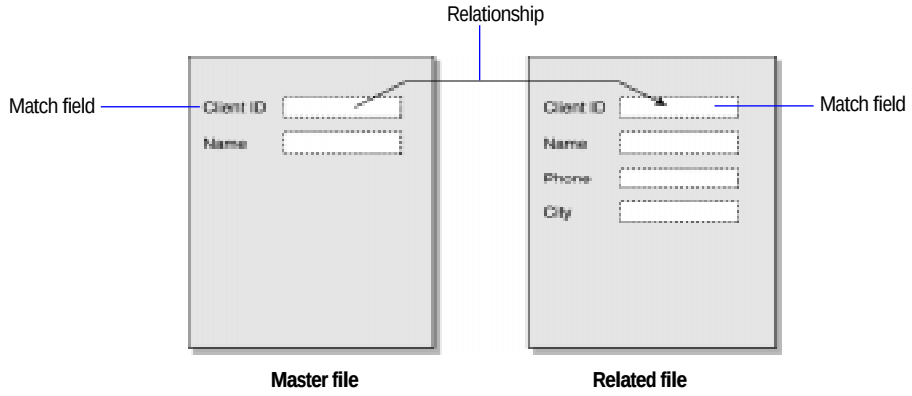
Note A complex set of lookups or a complex relational database may require an administrator who understands the design and how to maintain it. The administrator might also train others to use the database.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

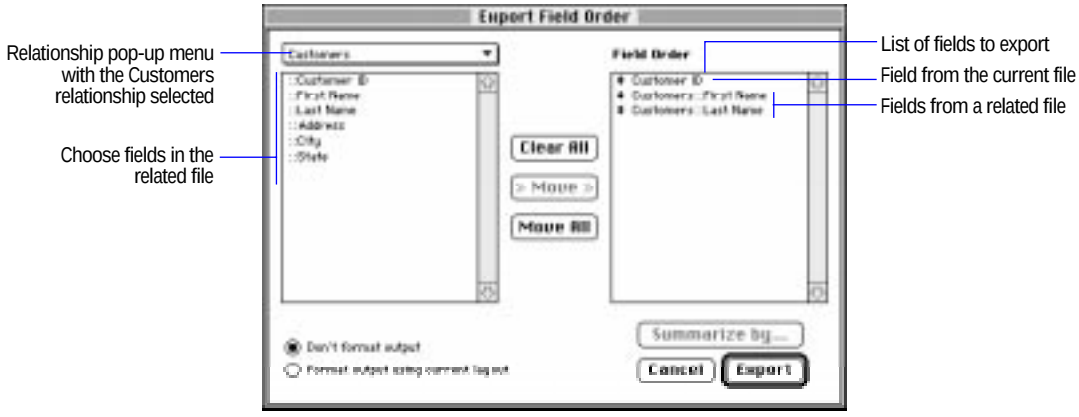
- lookups, overview
- relational databases

Understanding relationships

Whenever you want to use data from another file—either for a lookup or in a relational database—you must first define a relationship from the master file to the related file. A relationship is an expression that includes the name of the match field in the master file, the related filename, and the name of the match field in the related file.



After you define a relationship, you can choose its name from the relationship pop-up menu as you work in the master file. The relationship pop-up menu is in all dialog boxes where you can select field names in related files. The following example shows the dialog box used to export FileMaker Pro data.



Once a connection is established between two files, you then have access to data in the related file in any of the following ways:

- Define a lookup, to copy data from *one* related record for *each* record in the master file (establishing a *one-to-one* correspondence between data in the master file and data in the related file).
- Place one or more related fields in a layout of the master file, to display data from *one* related record for *each* record in the master file. This establishes a *one-to-one* correspondence between data in the master file and data in the related file.
- Add a portal in a layout of the master file, and then place one or more related fields in the portal to display data from *more than one* related records for *each* record in the master file. This establishes a *one-to-many* correspondence between data in the master file and data in the related file.

Keep these points in mind:

- To define a relationship for a lookup, see page 10-12. To define a relationship for a relational database, see page 10-21.
- Each relationship involves only one master file and one related file; however, you can define many relationships from a master file and many relationships to a related file. The related file of one relationship can be a master file for a different relationship.
- You can define many relationships between the same two files. For example, the relationships can specify different match fields.
- The match fields for a relationship can have different names; what determines that the relationship is established is that the fields have matching values. Be sure the fields are the same type and are indexed; otherwise, the relationship might not find the records you expect.
- You can define a relationship from one file to the same file (a *self-join*.) For example, use a self-join in a portal to display a subset of data in the current file, like all the employees of each manager.
- If the master file is protected with passwords, you must have the master password to define relationships. (See "Defining passwords" on page 7-11.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ relationships, understanding

Defining lookups between files

Important Before you begin, be sure you understand the information in the previous sections that explains lookups and how they differ from relational databases.

Defining a lookup

1. In Browse mode or Layout mode in the master file, choose Define from the File menu, and then choose Fields.
2. In the Define Fields dialog box, double-click the lookup destination field (the field to copy data to). Or create a field, and then double-click it.
3. In the Entry Options dialog box, select Looked-up value.
4. In the Lookup dialog box, choose the relationship to use from the relationship pop-up menu.

   Or define a relationship by choosing Define Relationships from the pop-up menu. See “Defining a relationship for a lookup” in the following section.
5. In the list of field names, select the lookup source field (the field to copy data from).
6. Select options for the lookup.

To	Do this
Determine what to do when values in the match fields are not equal	For If no exact match, then, select an option to copy no value, copy the next lower or next higher value that’s in the lookup source field, or display the message or data you type in the text box (up to 255 characters)
Prevent null (empty) data in the lookup source field from being copied to the lookup destination field	Select Don’t copy contents if empty. (Deselect this option to allow empty data to be copied)

Lookup for Field "Unit Price"
Products
Cancel
OK
Choose the relationship to use, or define a new one
Select an option for lookups with unequal data in match fields
Select the lookup source field

7. Click OK, click OK again, and then click Done.

Keep these points in mind:

- Be sure the lookup source field and lookup destination field are the same field type; otherwise, you might get unexpected results.
- To change a lookup, in the Entry Options dialog box, be sure Looked-up value is selected, click Specify, and then make your changes. To stop using a lookup, deselect Looked-up value in the Entry Options dialog box.
- When data in the related file changes and you want the master file to contain the new values, you can look up the data again. See "Updating lookup values" on page 10-14.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ lookups, defining

Defining a relationship for a lookup

1. In the Define Relationships dialog box, click New.

2. In the Open dialog box, double-click the name of the related file.
3. In the Edit Relationship dialog box, for Relationship Name, you can type a unique name for the relationship (otherwise, FileMaker Pro uses the name of the related file).

   Don't include colons (:) in the name. FileMaker Pro ignores spaces at the end of the name.
4. Select a match field in the master file and a match field in the related file.

5. Click OK, and then click Done.

Keep these points in mind:

- You can define a relationship for a lookup when you define the lookup. See the previous section.

- To change a relationship, see "Changing relationships" on page 10-29.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ lookups, defining

Updating lookup values

If you change data in the match field of the related file or in the lookup source field, FileMaker Pro doesn't automatically update the data in the lookup destination field. To update the data, you need to look it up again.

Important You can't undo your actions when you update lookup values.

1. In the master file, locate the records that contain the values to update.

   If necessary, find or omit records first. (See "Finding information" on page 4-20 and "Omitting records" on page 4-27.)
2. Select the match field in the current file, and then choose Relookup from the Mode menu.
3. When you see an alert message, click OK.

To define a script to update lookup values automatically, see chapter 5, "Using ScriptMaker and buttons."

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ lookups, updating

Working with relational databases

The rest of this chapter explains how to plan, create, and work with relational databases.

Important Before you begin, be sure you understand the information in the previous sections that explain relational databases and how they differ from lookups.

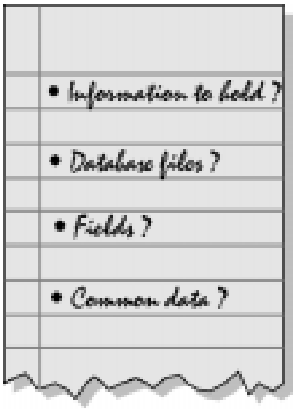
Planning a relational database

An efficient relational database organizes and stores information that you can retrieve and use to suit your needs. Related database files work together to ensure that the correct data is available when you need it.

It’s a good idea to plan a database on paper first. Follow these general steps to plan a relational database:

1. Begin by asking questions, like these:

- What information will the database hold?
- What database files are needed?
- What fields will each database file contain?
- What common data exists among the database files?

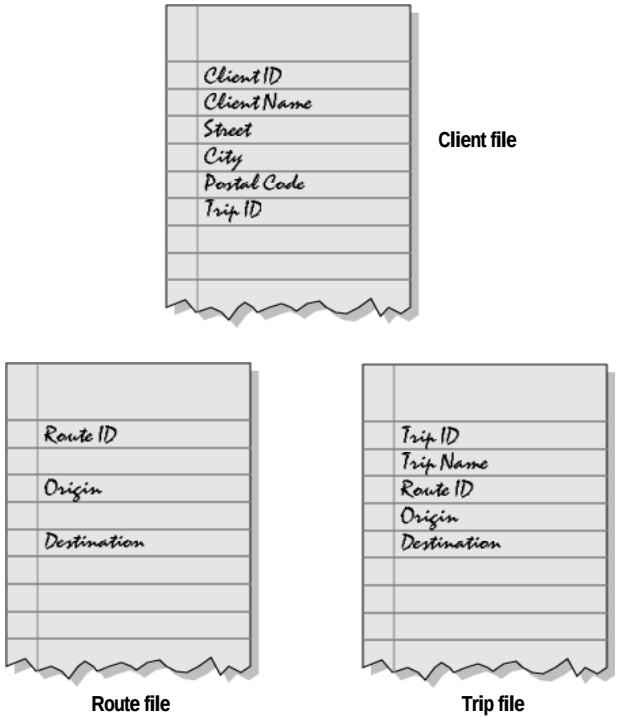


2. Determine the database files and the data they will include.

When you understand what you want the database to accomplish, you’re ready to list all the database files it will include. For example, for a travel agency, you might want a group of files that holds all the information about your clients, the trips your company offers, and accounting data.

As you design the files, think about the fields you want to include and which fields will contain common data.

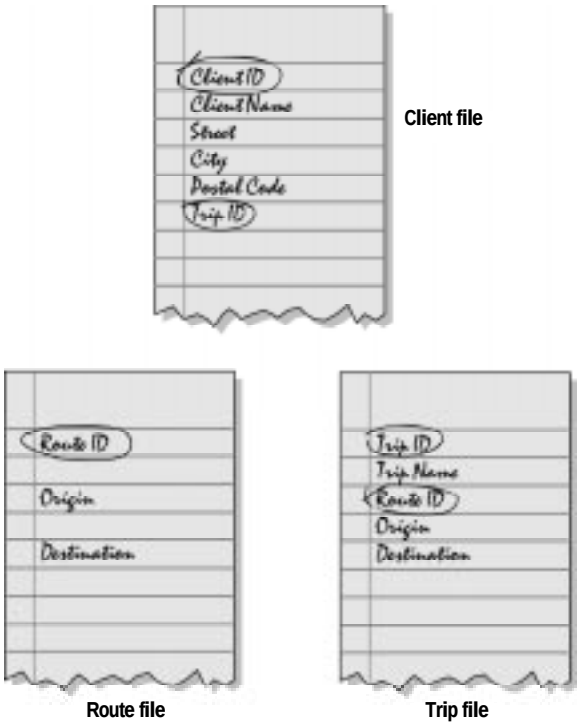
Keep each file simple. For example, a Route file might have fields for a route identification number, the departure city, and the destination city. A Trip file might have fields for a trip identification number and trip name. You can combine data from the Route file in records of the Trip file.



3. Determine the match field or fields for each file.

Each database file has at least one field that can be used to determine whether or not a new record should be added to the file. This field is a match field. Often this field contains a value unique to each record.

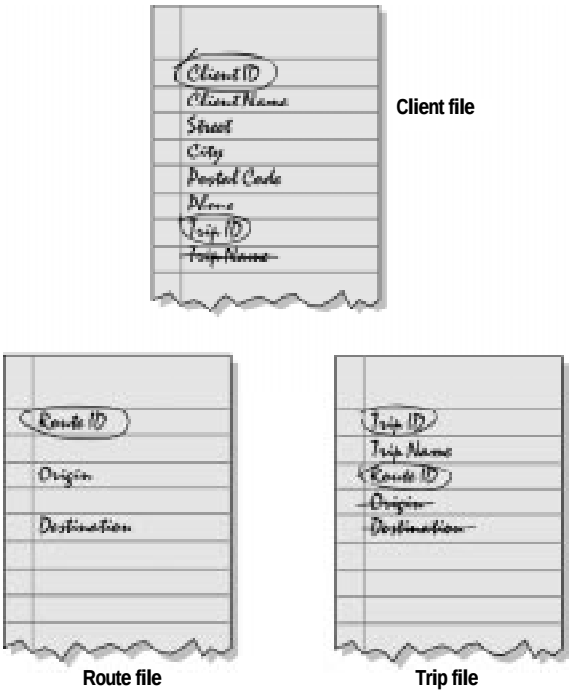
For example, in a Client file you might want to assign each client a unique, identifying number. You wouldn't enter a client number into the file unless you had a new client to add, so the existence of a client number determines the existence of a record.



4. For each file, decide which fields will store data and which ones will use data from other files.

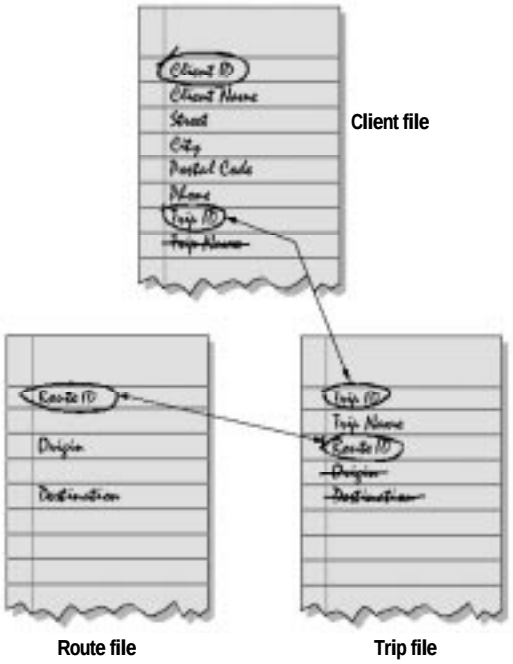
The fields in each database file all store a single occurrence of the subject of the database file. For example, the fields in the Client file (client identification number, name, address, and phone number) together store all the information about one client. Other data can be combined as needed from other database files.

Based on the file's subject, you can see where it makes sense to store the data and where to use stored data from a different file. For example, you might want to use trip information in a Client file (to see which clients took which trips), so you could use the Trip fields in the Client file.



5. Determine the relationships between the files.

Each database file is related in some way to all the other database files. What defines a relationship between files is that their fields contain common data. Between match fields that have common data, draw a line from one file to another.



Determining relationships between database files lets you see where you can use data stored in one file in another file. Establishing these relationships promotes consistent data entry and retrieval and reduces the existence of duplicate data among the database files.

6. Consider who will use the database and whether you want to restrict access to some files or fields.

   For information about setting up passwords and access privileges, see "Protecting your files" on page 7-9.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- relational databases

Creating a relational database

After you've planned your relational database, follow these general steps to create it (detailed instructions follow):

1. Define the relationships to use.
2. Depending on whether you want to work with data from one related record or more than one in each record in the master file, add related fields directly in the layout or in a portal in the layout.
   - For a related field by itself, add the related field directly in the layout.
   - For related fields in a portal, create the portal in the layout, and then add the related fields in the portal.

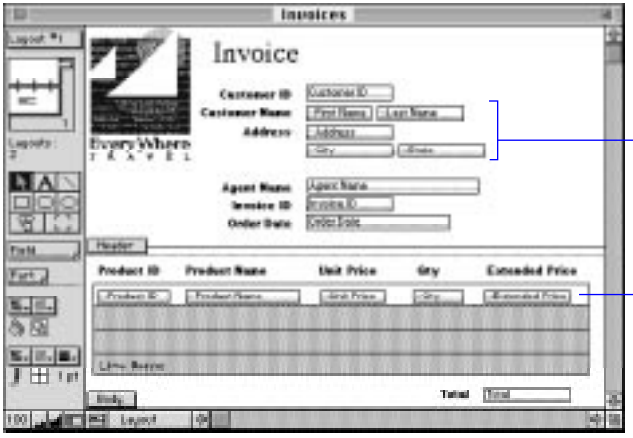
You add related fields and portals in Layout mode and then work with data from the related records in all modes.

Deciding where to place related fields

You can display related fields directly in a layout or inside a portal.

- Place related fields directly in the layout to display data from the first related record in the related file, even when the match field in the related file contains more than one occurrence of the same value. (A related field directly in a layout establishes a *one-to-one* correspondence between data in the master file and data in the related file.)
- Place related fields in a portal in the layout to display data from all found related records in the related file. (A portal establishes a *one-to-many* correspondence between data in the master file and data in the related file.)

Related fields in Layout mode



Related fields in Browse mode

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related fields

Defining relationships for a relational database

1. In Browse mode or Layout mode in the master file, choose Define from the File menu, and then choose Relationships.
2. In the Define Relationships dialog box, click New.

Relationships currently defined for the master file

3. In the Open dialog box, double-click the name of the related file.
4. In the Edit Relationship dialog box, for Relationship Name, you can type a unique name for the relationship (otherwise, FileMaker Pro uses the name of the related file).

   Don't include colons (:) in the name. FileMaker Pro ignores spaces at the end of the name.
5. Select a match field in the master file and a match field in the related file.

Type a relationship name

Select a match field in the master file

Select a match field in the related file

Option for records in the master file

Options for related records

6. Select options for the relationship.

To do this while browsing records in the master file	Select
When you delete a record in the master file, delete related records (in the related file)	When deleting a record in this file, also delete related records. (See "Deleting related records" on page 10-34.) Related records may not be visible on the current layout
Add records to the related file	Allow creation of related records. (See "Creating related records" on page 10-33.)
Sort related records before displaying them in the master file	Sort related records, then specify how you want related records sorted. (See "Sorting records with related fields" on page 10-43.)

7. Click OK, and then click Done.

Keep these points in mind:

- A match can be defined only on fields that can have an index.
- You can define a relationship when you add a related field or create a portal in a layout. See the following sections.
- To change a relationship, see "Changing relationships" on page 10-29.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ relational databases

Creating a portal to hold related fields

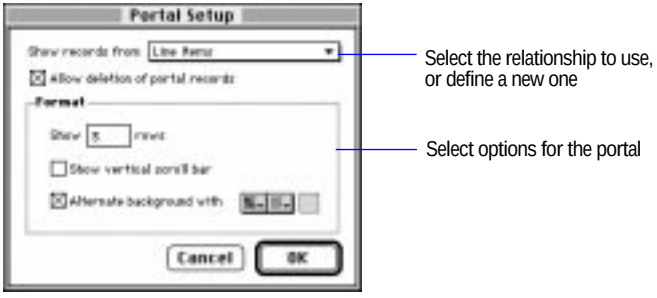
Important Before you begin, be sure you want to create a portal to hold related fields. (See "Deciding where to place related fields" on page 10-20.)

1. In Layout mode in the master file, select the Portal tool.

Invoices
Invoice
Portal tool
If you don't see layout tools, click the status area control
Drag the pointer to draw the portal

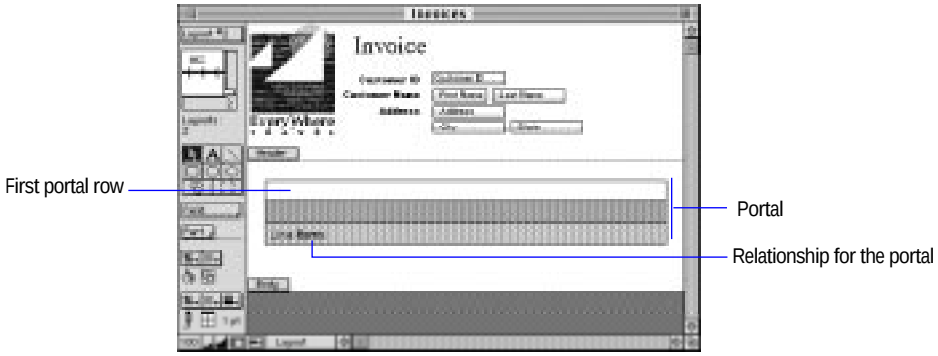
2. Click in the layout where you want the portal to start and drag the pointer diagonally until the portal is the size you want.
3. In the Portal Setup dialog box, choose the relationship to use from the Show records from pop-up menu.

   Or define a relationship by choosing Define Relationships from the Show records from pop-up menu. See "Defining relationships for a relational database" on page 10-21.



4. Select options for the portal, and then click OK.

To	Select
Delete records in the related file by selecting a portal row in Browse mode, and then choosing Delete Record from the Mode menu	Allow deletion of portal records
Specify the number of rows to display in the portal	For Show *<value>* rows, type a number
Display a scroll bar on the right side of the portal	Show vertical scroll bar
Display a background color and pattern for every other row of the portal	Alternate background with, and then choose a fill color and pattern from the palettes



5. Place related fields in the portal (see the next section).

Keep these points in mind:

- You can display objects other than fields in a portal. An object is in a portal if its upper-left corner is inside the portal. An object placed in the first row of a portal is displayed once for each related record.
- A portal can't contain another portal. If you place a portal in a portal, they overlap.
- You can place a portal in any layout part. See "Working with layout parts" on page 3-24.

- To number rows in a portal, use Paste Special to paste the record number into the first portal row.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

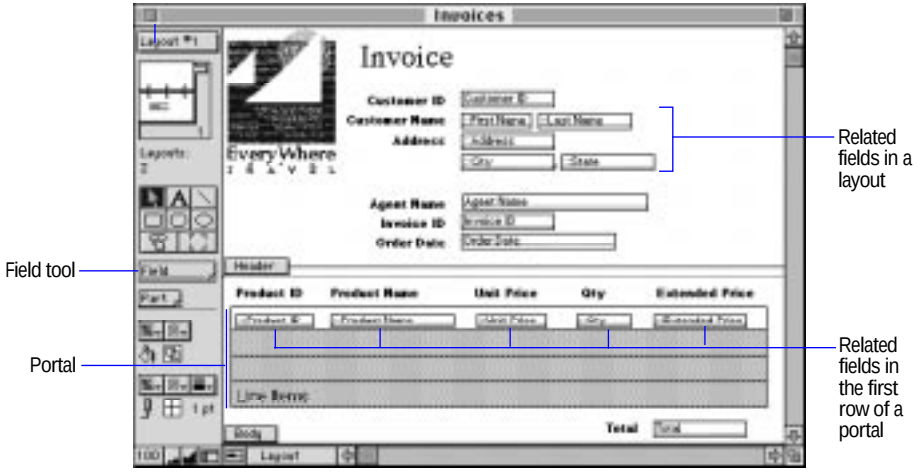
▸ portals, creating

Placing related fields in a layout or portal

Use the following steps for adding related fields directly in a layout or in a portal.

Important Before you begin, determine where to place related fields (see "Deciding where to place related fields" on page 10-20). If you're placing related fields in a portal, create the portal first (see "Creating a portal to hold related fields" on page 10-23).

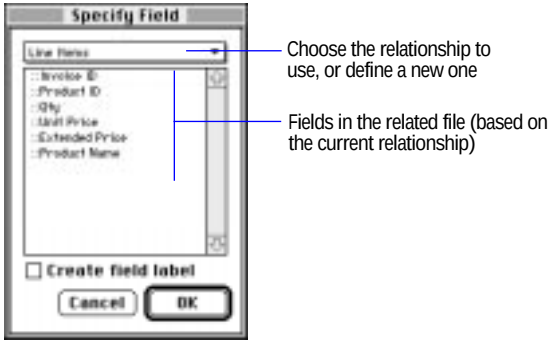
1. In Layout mode in the master file, hold down the Field tool and drag the new field onto the layout or in the first row of a portal.



2. In the Specify Field dialog box, choose a relationship from the relationship pop-up menu.

   You can define a relationship by choosing Define Relationships from the pop-up menu. See "Defining relationships for a relational database" on page 10-21.

3. Double-click the name of a related field.



Note To prevent users from changing data in a related field, deselect Allow entry into field in the Field Format dialog box (in Layout mode) for the related file. (See "Determining data entry in fields" on page 3-68.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related fields

Changing related fields and portals

In Layout mode, related fields and portals are layout objects that you can change like any other FileMaker Pro object.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related fields

Selecting, moving, or deleting related fields and portals

To	Do this in Layout mode
Select a related field	Click the field
Select a portal	Click the portal area outside any fields
Change the tab order of related fields	See "Setting the tab order for data entry" on page 3-69.
Move or delete the field label of a related field	Select the label, and then move or delete it
Move related fields or portals	See "Moving objects" on page 3-44. To move related fields with a portal, select the fields and the portal

To	Do this in Layout mode
Delete related fields or portals from a layout	In Layout mode, select the field or portal, and then press Delete. FileMaker Pro deletes the objects, not the relationships, field definitions, or data

Changing the appearance of related fields and portals

To	Do this in Layout mode
Change the fill color or pattern, pen color or pattern, or line width of a related field or portal	See "Changing lines, colors, and patterns" on page 3-51.
Change the color or pattern of alternating rows in a portal	Double-click the portal. In the Portal Setup dialog box, select Alternate background with, and then choose a fill color and pattern from the palettes. Click OK
Resize related fields or portal rows	See "Resizing objects" on page 3-50. Resizing the first row of a portal resizes all rows
Change the number of rows displayed in a portal	Double-click the portal. In the Portal Setup dialog box, type a new value for Show *<value>* rows. Click OK
Show or hide a portal scroll bar	Double-click the portal. In the Portal Setup dialog box, select Show vertical scroll bar. Click OK
Change the data format of related fields	See "Defining display formats for fields" on page 3-59. The changes only affect the format on the current layout
Change the appearance of a related field in the current layout	See "Working with fields in a layout" on page 3-55. The changes only affect the appearance on the current layout
Slide related fields and portals to remove blank space between layout objects	See "Removing spaces at the end of fields and parts" on page 6-5. Objects in a portal don't slide or shrink, but when a portal slides, objects within the portal slide with it

Copying and pasting related fields and portals

To	Do this in Layout mode
Cut, copy, and paste related fields	See "Cutting, copying, and pasting objects" on page 3-45. If you paste a related field into another file, FileMaker Pro looks for a matching related field name in the new file. If the matching name exists, FileMaker Pro pastes the field in the layout with that same name. Otherwise, a template field (a field with no association to any field in the database file) is pasted
Copy and paste portals	See "Cutting, copying, and pasting objects" on page 3-45. To copy and paste related fields with a portal, select the fields and the portal. If you paste a portal into another file, FileMaker Pro looks for a matching relationship name in the new file

Choosing a different relationship for a portal

1. In Layout mode, double-click the portal.
2. In the Portal Setup dialog box, choose a relationship from the pop-up menu, and then click OK.

If you change the relationship after adding related fields to the portal, the fields don't change, but FileMaker Pro matches records based on the new relationship. Remove the fields from the portal, and then add related fields based on the new relationship, if needed.

Changing relationships

When you change a relationship, your changes affect which records are found in the related file and displayed in records of the master file.

When you delete or change a relationship, all records involved in that relationship are affected by your changes.

1. Choose Define from the File menu, and then choose Relationships.
2. In the Define Relationships dialog box, select a relationship, and then select an option.

To	Click
Delete the relationship	Delete, and then click Delete in the confirmation message. Be sure to delete all references to the relationship in the master file
Quickly create a similar relationship	Duplicate. To make changes, with the duplicate selected, click Edit. Then see the next step
Change the relationship	Edit, and then see the next step

3. To edit the relationship, make your changes in the Edit Relationship dialog box, click OK, and then click Done.

To	Do this
Rename a relationship	For Relationship Name, type a new name
Change options for a relationship	Select or deselect options
Choose a different related file	Click Specify File. In the Open File dialog box, double-click the name of a related file. Then, in the Edit Relationship dialog box, select the match fields you want

To	Do this
Change match fields	Select a new match field in the master file, the related file, or both

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- relationships, changing

Working with related files and fields

The following sections explain how to work with data in related files and fields.

Working with related files

To do this with related files	Keep these points in mind
Work with passwords and access privileges	You must have the appropriate access privileges to a related file or field. For example, to add data to a related field, you must have the privilege to edit records for the related file. (See "Protecting your files" on page 7-9.)
Check spelling	Check spelling of data in related fields just as you do with data and text in the master file. (See "Important Always quit FileMaker Pro before you turn off your computer." on page 1-13.)
Copy data	When no fields and no records in a portal are selected, Copy copies data in the master record and in all records in portals. When a record in a portal is selected, Copy copies the data in the record in the portal. (See "Copying and moving values and records" on page 4-13.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related files

Working with related fields

To do this with related fields	Keep these points in mind
Change field definitions	Change data entry options and validations directly in the related file only, because the data is defined in the related file. (See "Changing field definitions" on page 2-26.)
Change field formats	Change the way data is displayed and formatted in the appropriate layout of the master file. (See "Defining display formats for fields" on page 3-59.)

To do this with related fields	Keep these points in mind
Define a calculation formula in the master file that refers to a related field	In the Specify Calculation dialog box, choose a relationship from the relationship pop-up menu. Then select a related field. (See "Understanding formulas" on page 2-14.) References to related fields can become invalid when you create or delete a field, change the field type or number of repetitions, or have a missing field definition or mismatched field types (for example, when a field is deleted in the related file). When a field reference is invalid, FileMaker Pro alerts you
Set the order for related fields (for columnar reports, exporting, and so on)	You can place a related field anywhere in the field order—before, after, or between fields in the master file In the Specify Field Order dialog box, choose a relationship from the relationship pop-up menu. Then select related fields in the field list, in the order you want
Insert a merge field from a related file	In the Specify Field dialog box, choose a relationship from the relationship pop-up menu. Then select a related field. (See "Adding merge fields" on page 3-58.)
Summarize data that's in a portal	Make the field a calculation field, and then define a formula that includes an aggregate function. For example, for a field that calculates the total of values in the related field Price (which is in a portal and uses the relationship Line Items), define the formula: `Sum(Line Items::Price)` for the Total field. (See "Functions" on page 2-21 and "Aggregate functions" on page C-6.)
Define a script step to work with related fields	In the Specify Field dialog box for the step, choose a relationship from the relationship pop-up menu. Then select a related field

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related fields

Working with related records

The following table explains how to work with related records in some areas of FileMaker Pro. For other areas, see the following sections.

To do this with related records	Keep these points in mind
Duplicate related records (in Browse mode)	▪ To duplicate a master record (and display related data), be sure no records in a portal are selected, and then choose Duplicate from the Edit menu. (See "Adding and duplicating records" on page 4-3.) ▪ To duplicate a related record that's in a portal, select the record, and then choose Duplicate from the Edit menu. The Allow creation of related records option must be selected for the portal relationship
Import and export related records	▪ You can't import related fields, but you can import directly from a related file. (See "Importing data into FileMaker Pro" on page 8-4.) ▪ To export related fields, use the relationship pop-up menu to choose the fields in the Export Field Order dialog box. (See "Exporting data from FileMaker Pro" on page 8-9.)
Replace related records	See "Replacing field values" on page 4-15.
Preview and print related records	▪ FileMaker Pro prints related records and portals you see in Preview mode. (See chapter 6, "Previewing and printing information.") ▪ To prevent related fields and portals from printing, see "Keeping objects from printing" on page 6-9. ▪ When you print a portal that displays a scroll bar, FileMaker Pro prints only the records displayed in the portal when the portal isn't scrolled
Work with records in shared files	FileMaker Pro limits access to some commands and records to keep users from interfering with each other. (See "Working with shared files" on page 7-6.) ▪ When you make changes to a master record, FileMaker Pro prevents other users from changing the same record ▪ When you make changes to a related field, FileMaker Pro prevents other users from changing the associated related record and master record ▪ Other users can access the record after you select a field in a different record, select a different record in the same file, or leave the master record

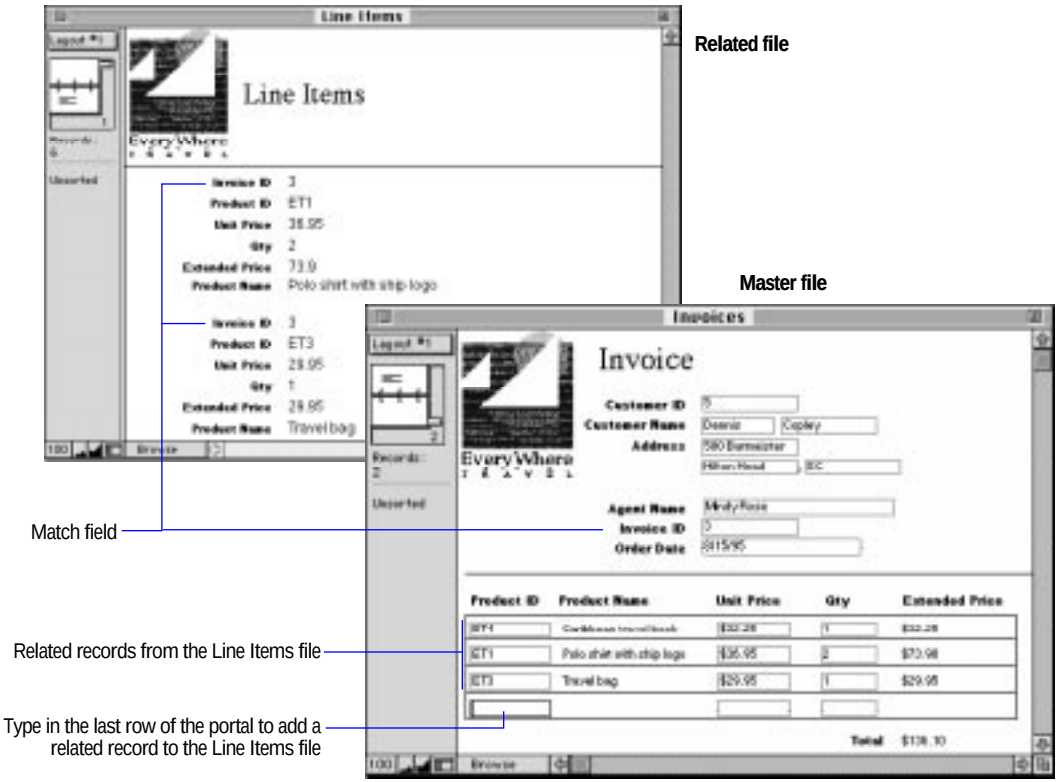
? Choose FileMaker Help Index from the ? or Help menu, and then type:

▸ related records

Creating related records

You can add records to the related file as you enter data in a record in the master file.

To add related records from the master file, the Allow creation of related records option must be selected for the relationship. (See “Defining relationships for a relational database” on page 10-21.) When this option is selected, typing in a related field that has no corresponding related record creates a related record based on the match field in the master file.



To	Do this
Create a record in the master file	In Browse mode, choose New Record from the Mode menu
Add a record in a related file	▪ If the related field is in a portal, type data into the field in the last row of the portal, and then press Tab ▪ If the related field isn't in a portal, type data into the field, and then press Tab

Note If a related file is locked or write-protected, or the user doesn't have access privileges to create records, FileMaker Pro doesn't add new records. See "Working with related records" on page 10-32 and "Defining passwords" on page 7-11.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ related records

Deleting related records

While browsing through records in a master file, you can delete records from a related file when one or both of the options for deleting records are selected.

Important You can't undo deleting data or records. Before deleting, consider making a backup copy of your files.

To delete records, in Browse mode, choose Delete Record from the Mode menu. (See "Deleting records" on page 4-30.) FileMaker Pro deletes information based on the following:

- When a portal row is selected (by clicking inside the row but outside any fields in the row) and Allow deletion of portal records is selected in the Portal Setup dialog box, FileMaker Pro deletes the associated related record. (See "Creating a portal to hold related fields" on page 10-23.)
- When anything other than a portal row is selected, FileMaker Pro deletes the master record. If When deleting records in this file, also delete related records is selected in the Edit Relationship dialog box, all related records are also deleted. (See "Defining relationships for a relational database" on page 10-21.)

Note Delete All deletes the records in the found set of the master file. If When deleting records in this file, also delete related records is selected for the relationship, FileMaker Pro also deletes the related records.

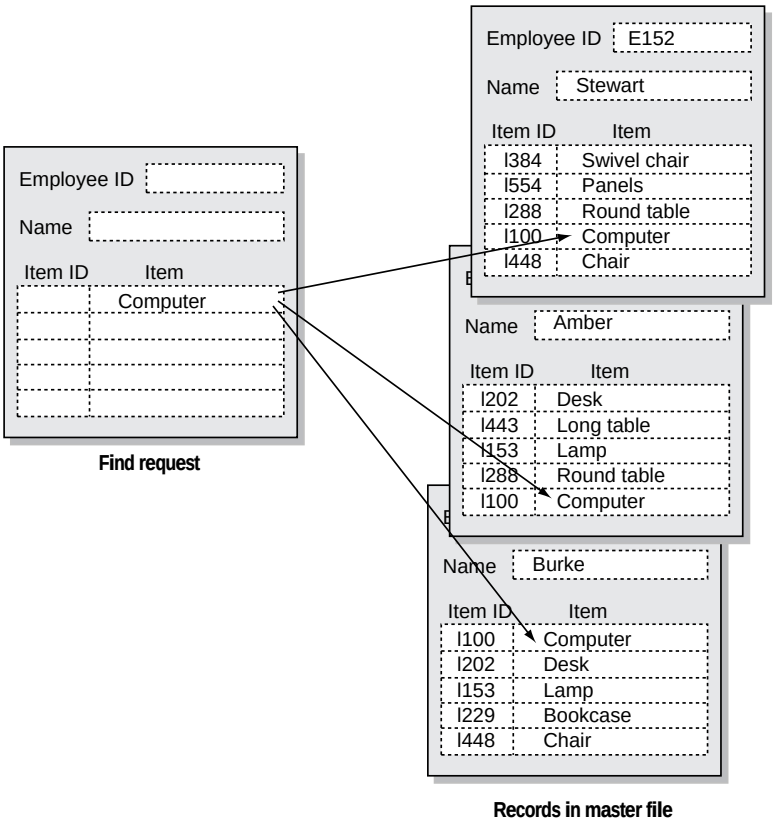
? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related records

Finding and omitting related records

You can include related fields in find criteria when you find records in a master file. (For more information, see “Finding information” on page 4-20 and “Omitting records” on page 4-27.)

When you find records using related fields in a portal, FileMaker Pro displays all records related to the found set of records in the master file, not just related records that satisfy the find criteria. For example, suppose you search for records whose Item field (which is in a portal) contains Computer. The found set includes all records in the master file that contain Computer in any row of the portal.



You can omit master records that include related fields, but you can't omit related records.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related records

Sorting records with related fields

(For general information on sorting records, see page 4-39.)

You can sort on related fields when you sort records in the master file. When you sort on a related field, the value from the first related record FileMaker Pro finds in the related database is used for sorting unless you specify otherwise. (See "Sorting related records" below.)

1. In the Sort Records dialog box, choose a relationship from the relationship pop-up menu.
2. Select related fields in the order you want them sorted, and then click Sort.

Note You can place a related field anywhere in the field order—before, after, or between fields in the master file.

Sorting related records

You can sort related records before displaying their values in the master file. Normally, FileMaker Pro looks in the related file, finds the first record that matches according to the specified relationship, and displays the related values in the master file. However, you can have FileMaker Pro sort related records first, and then display values from those sorted records in the master file. Instead of displaying the first related record, FileMaker Pro displays the first value encountered after sorting. The displayed value could be a highest value, a lowest value, or a value sorted using a custom order based on a value list.

Sorting related records is especially useful if you are using a portal to display multiple related records. You can use this feature to have related records appear in the portal in the sorted order you specify.

1. Choose Define from the File menu, and then choose Relationships.
2. Select the relationship you want to work with.
3. Click Edit.
4. In the Edit Relationship dialog box, select Sort related records.
5. In the Specify Sort dialog box, define how you want fields in the related file to be sorted before they are displayed in the master file.

Note If you sort records in the master file based on a related field—and you have specified that the related field display a sorted value—FileMaker Pro:

- first sorts the values in the related field
- then uses that sorted related value to sort the records in the master file

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- related fields
- sorting records

Invoicing example

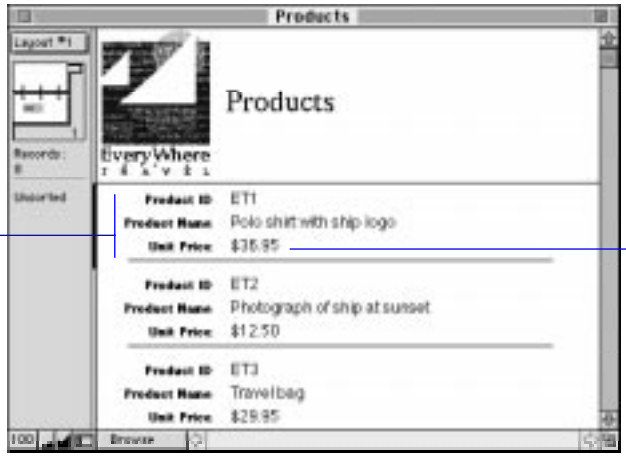
The following sections contain a step-by-step example for setting up a relational invoicing system, using a sample travel agency named EveryWhere Travel.

Example step 1: Plan the system

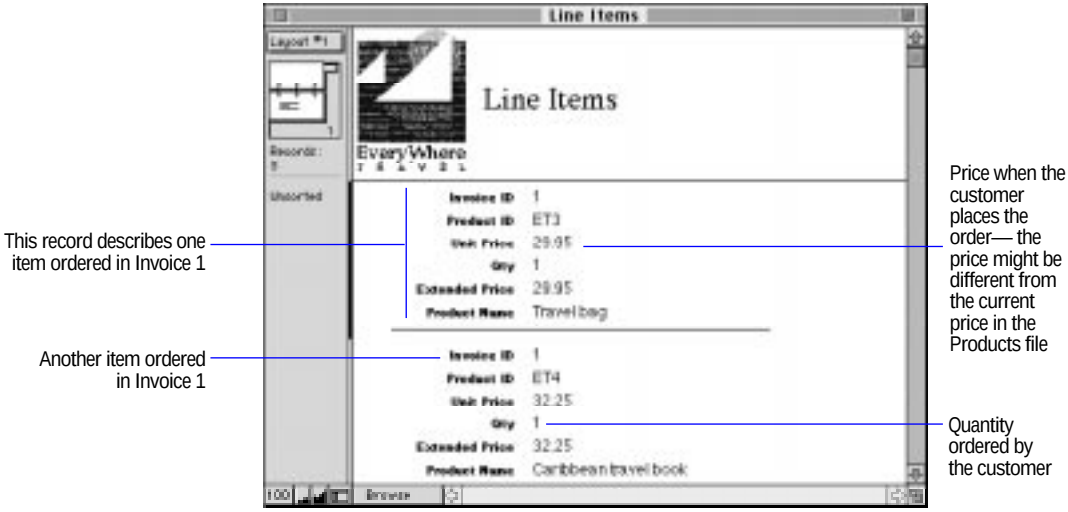
In addition to booking cruises, EveryWhere Travel sells souvenirs, like shirts and ship photographs. The company followed the procedure in "Planning a relational database" on page 10-14 to design the following database files for tracking and billing the souvenir sales.

- A Customers file stores information for each customer, including a unique identification number. When a new customer calls to place an order, an agent creates a record in the Customers file.

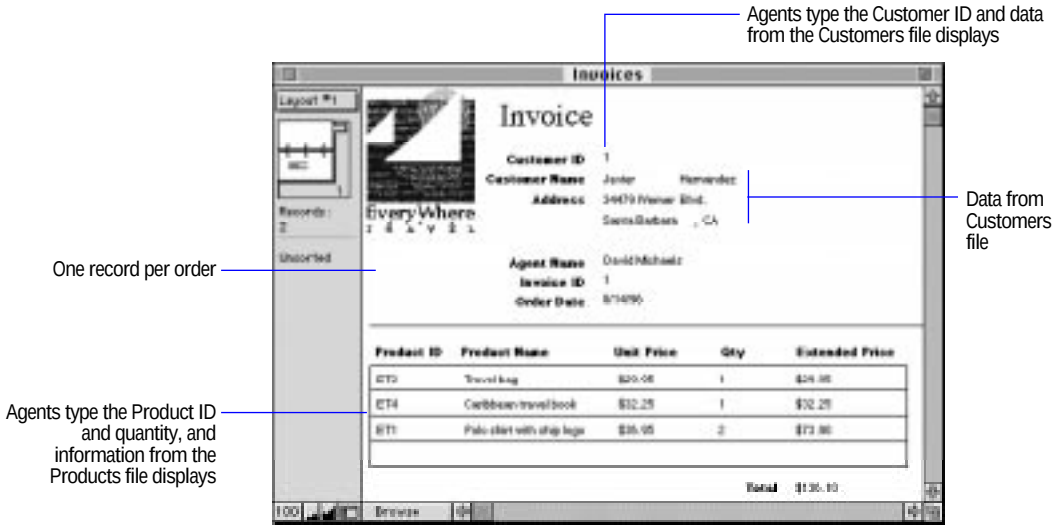
- A Products file stores information about available products.


Products
Products
Product ID ET1
Product Name Polo shirt with ship logo
Unit Price $35.95
Product ID ET2
Product Name Photograph of ship at sunset
Unit Price $12.50
Product ID ET3
Product Name Travel bag
Unit Price $29.95
One record per product
Current price of the product—if you change this value, FileMaker Pro doesn't save the old price

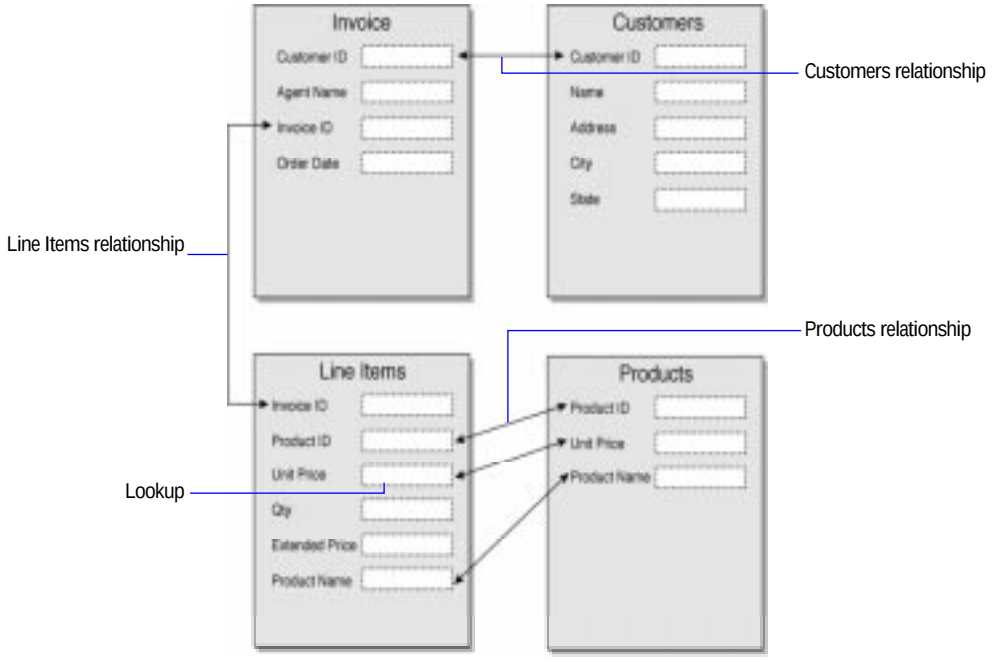
- A Line Items file stores the order number, product identification number, price, and quantity of each item in every invoice. For every line item in the Invoice, there's one record in the Line Items file.


Line Items
Line Items
Invoice ID 1
Product ID ET3
Unit Price 29.95
Qty 1
Extended Price 29.95
Product Name Travel bag
Invoice ID 1
Product ID ET4
Unit Price 32.25
Qty 1
Extended Price 32.25
Product Name Caribbean travel book
This record describes one item ordered in Invoice 1
Another item ordered in Invoice 1
Price when the customer places the order— the price might be different from the current price in the Products file
Quantity ordered by the customer

- An Invoices file is used for order entry and billing. When a customer places an order, an agent enters a customer identification number to display the customer's name and address. The agent enters data in the Product ID field for each item ordered. FileMaker Pro enters data in the Invoice Number and the Order Date fields.



The following figure shows how the database files are related.



Tip If you use fields that contain identification numbers, plan the field formats when you plan the database files. For example, customer identification numbers can be telephone numbers, serial numbers, or a combination of a telephone number and first name.

You can enhance this simple invoicing system in many ways. For example:

- Place a button in the Order Entry layout in the Invoices file that agents click when a new customer calls. The button performs a script that switches to the Customers file, pauses for the agent to enter information, and then switches back to the Invoices file.
- Use the Line Items file to create reports, like how many items were sold in February.
- In the Products file, include fields for product information, like weight, color, and so on.
- Create a Vendors file with information about companies that supply products. Define a Vendor ID field in the Products file, and then define a relationship to a Vendor ID field in the Vendors file.

Example step 2: Define fields

After you plan the invoicing system, create the database files and define the fields. (See “Defining database fields” on page 2-3.) Create the files that contain lookup source fields first.

1. Define these fields in the Customers file:

Field names	Field type	Select this Auto Enter entry option
Customer ID	Number	Serial number
First Name, Last Name, Address, City, State	Text	

2. Define these fields in the Products file:

Field name	Field type	Select this Auto Enter entry option
Product ID	Number	Serial number
Product Name	Text	
Unit Price	Number	

3. Define these fields in the Line Items file:

Field name	Field type	Select this Auto Enter entry option
Invoice ID	Number	
Product ID	Text	
Qty	Number	

4. Define these fields in the Invoices file:

Field name	Field type	Select this Auto Enter entry option
Customer ID	Number	
Agent Name	Text	
Invoice ID	Number	Serial number
Order Date	Date	Creation Date

Example step 3: Define relationships

After you define the fields, define the relationships from the master files.

Master file	Related file	Relationship name	Match fields	Select these options for the relationship
Line Items	Products	Products	Product ID	
Invoices	Customers	Customers	Customer ID	
Invoices	Line Items	Line Items	Invoice ID	▪ When deleting a record in this file, also delete related records ▪ Allow creation of related records

Example step 4: Define fields that use relationships

When the relationships are defined, you can create the lookup and calculations.

1. Define these fields in the Line Items file:

Field name	Field type	Comments
Unit Price	Number	A lookup to Unit Price in the Products file. Use the Products relationship
Extended Price	Calculation	Enter the calculation `Unit Price * Qty`. Use fields from the current file (not the Products relationship)
Product Name	Calculation	Use the related field `Products::Product Name`. For Calculation result is, choose Text

2. Define the Total field in the Invoices file.

The Total field is an unstored calculation that adds the extended price of all line items. Use the Line Items relationship to define Total as:

```
Sum(Line Items::Extended Price)
```

Example step 5: Create layouts

Create layouts in the master files for data entry and reports. (See chapter 3, “Laying out and arranging information.”)

File	Layout names	Description
Invoices	Order Entry	Standard layout with a portal ▪ Place these fields from the Customers file directly in the layout: First Name, Last Name, Address, City, and State ▪ In the Portal Setup dialog box, choose the Line Items relationship and Allow deletion of portal records. Place these fields from the Line Items file in the first row of the portal: Product ID, Product Name, Unit Price, Qty, and Extended Price
Customers	▪ Data Entry ▪ Mailing labels	▪ Standard layout ▪ Labels layout
Line Items	▪ Sales Report by Product ▪ Sales Report by Month	▪ Standard layout with subsummary by product ▪ Standard layout with subsummary by month
Products	Data Entry	Standard layout

Example step 6: Enter data

Enter data in the Products and Customers files, and then test your database by creating records in the Invoices file. (See “” on page 4-2.)

Chapter 11: Publishing files on the Web

With FileMaker Pro 4.0, you can publish your database on the World Wide Web—without any additional software—using FileMaker Pro Web Companion and your TCP/IP Internet access. Your file can be viewed, edited, sorted, and searched by anyone who has Web browser software and access to the Internet or an intranet network. You can also choose how much or how little access users have to your file.

This chapter explains what you need to do to publish your databases on the Web.

About the World Wide Web

The Internet is a network of computers joined by data lines that communicate using a common software standard. The World Wide Web is part of the Internet.

In the most basic sense, the World Wide Web is a very large collection of pages stored on computers, or Web servers, around the world. Each computer connecting to the Internet has a unique address, called an IP address or Internet address. Web pages travel from one Internet address to another—first a Web browser requests specific Web pages, then the Web server delivers the requested page to the Web browser.

About FileMaker Pro Web Companion

There are two ways you can publish your database on the Web: FileMaker Pro Instant Web Publishing and FileMaker Pro Custom Web Publishing.

Instant Web Publishing lets you publish your database on the Web quickly and easily. You do not need to change your database, use any additional software, or design Web pages. You can control database privileges such as viewing, adding, editing, deleting, searching, and sorting records. Users see clear, consistent Web pages which let them open your file and work with it easily.

Publishing a database on the Web

Custom Web Publishing allows Custom Web pageyou to customize the appearance of your FileMaker Pro data on the Web. You need to create *custom Web pages*, which are HyperText Markup Language (HTML) pages that contain Claris Dynamic Markup Language (CDML) *tags*, or commands. The CDML tags enable HTML pages to interact with FileMaker Pro. For an overview, see “Custom Web Publishing” on page 24. For step-by-step instructions on Custom Web Publishing, see the CDML Reference database inside the Web Tools folder.

Important Regardless of the publishing method you choose, you should publish your database by running it on a computer with a full-time Internet connection.

What the Web Companion does

FileMaker Pro Web Companion functions as a Web server by communicating with Web browsers that request data from, or submit data to, a FileMaker Pro database. Similar to other Web server applications, the Web Companion delivers HTML Web pages and image files to the Web browser. The Web Companion supports the HTTP-Put and HTTP-Get commands. For more information about these HTTP commands, refer to the documentation that came with your Web browser.

The Web Companion also acts as a Common Gateway Interface (CGI) application, by handling the interaction between FileMaker Pro and Web browser software.

Note You can also publish databases using other common gateway interface (CGI) applications, which you must purchase from third-party vendors.

Why publish a database on the Web?

When you host a database on the Web, the number of people who can use your file is potentially large: the only requirements are Web browser software and access to the Internet (or an intranet network). Your file is available to anyone, using virtually any kind of computer, virtually anywhere in the world. You can, however, limit access using passwords.

You can also publish your database on the Web so that you can access it anywhere—on the road, at another office, or at home.

Publishing your database on the Web—an overview

The following section provides an overview of the steps required to publish your database on the Web using Instant or Custom Web Publishing.

Instant Web Publishing

1. Create a database, or select an existing database to publish.

   Perform the following steps on a computer connected to the Internet or an intranet via TCP/IP.

2. Make sure that the Web Companion plug-in is enabled in Application Preferences.

3. Make sure that Instant Web Publishing is enabled in the Web Companion Configuration dialog box.
4. **(Optional)** Change the default configuration of the Web Companion in the Web Companion Configuration dialog box.
5. **(Optional)** If you have created a custom home page, move it to the Web folder and specify it as your FileMaker Pro home page in the Web Companion Configuration dialog box and move it into the Web folder.
6. Open the database in FileMaker Pro 4.0.
7. Enable Web Companion Sharing in the File Sharing dialog box.
8. **(Optional)** Choose the layouts that specify which fields will appear in Table View, Form View, and Search View, and select sorting options.
9. Give your users information about accessing your database.

These steps are described in detail in the rest of this chapter.

Custom Web Publishing

1. Create a database, or select an existing database to publish.
2. Create custom Web pages that contain HTML and CDML tags.
3. Move the HTML pages and custom Web pages to the Web folder, in the FileMaker Pro 4.0 folder, of a computer connected to the Internet or an intranet via TCP/IP.

   Perform the following steps on a computer connected to the Internet or an intranet via TCP/IP.
4. Make sure that the Web Companion plug-in is enabled in Application Preferences.
5. **(Optional)** Disable Instant Web Publishing in the Web Companion Configuration dialog box.
6. Choose the home page and change any other settings in the Web Companion Configuration dialog box.
7. Open the database in FileMaker Pro 4.0.
8. Enable Web Companion Sharing in the File Sharing dialog box.
9. Give your users information about accessing your database.

For step-by-step instructions on Custom Web Publishing, see the CDML Reference database inside the Web Tools folder.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Web, publishing databases on

Getting ready to publish your files on the Web

To publish a file on the Web you need:

- a FileMaker Pro database
- a Windows 95-compatible, Windows NT-compatible, or Mac OS-based computer with access to the Internet (or an intranet)
- FileMaker Pro 4.0 (for Windows or Mac OS), with the Web Companion installed. (The Web Companion is automatically installed when you do an Easy Install.)
- optional: a custom home page, or HTML files containing CDML tags, for use with FileMaker Pro Custom Web Publishing

Internet access

It is best if the machine running your FileMaker Pro database has a full-time dial-up, ISDN, T1, T2, or T3 connection to the Internet (or similar capabilities). If you want to publish your database within your company or workgroup, you can use an intranet.

Without continuous Internet access, you can publish a database on the Web—but your database is only available while your machine is connected to the Internet.

If you are not sure of the type of Internet access available to you, consult your Internet service provider or network administrator.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Web, publishing databases on

Preparing files for the Web

If you are using FileMaker Pro Instant Web Publishing, you can publish all the fields in your database, or you can designate layouts for use with the Web Companion that don't show all fields. If you designate a layout, the Web Companion publishes only the fields contained in the layout you have specified. See "Setting options for Web display" on page 12 for more information on how these layouts will be available to you when you're ready to set up browser views.

If you want, you can create a new layout for use with the Web Companion. A simple, Standard layout is sufficient, as text styles, special backgrounds, and colors do not appear on the Web using FileMaker Pro Instant Web Publishing. Date and number formats, as well as repeating fields, do appear over the Web. For information on working with layouts, see chapter 3, "Laying out and arranging information."

If you have specified one or more passwords using FileMaker Pro access privileges to limit access to your database, users are required to enter a password when viewing your database on the Web.

If you are using FileMaker Pro Custom Web Publishing, you will need to move any HTML pages and custom Web pages you have created into the Web folder, which is inside the FileMaker Pro 4.0 folder.

Security considerations before you publish a database

There are some important security considerations to keep in mind before sharing a FileMaker Pro 4.0 database on the Web:

- If you have chosen a layout with related fields in the Web Companion View Setup dialog box, those related fields appear when a Web user opens the master database—even if the related databases are protected with FileMaker Pro access privileges. Keep this in mind when designating layouts for use with published databases.
- If your database uses related fields, and you are using Instant Web Publishing with the built-in home page (available in the Web Configuration dialog box), the related database(s) are also made available on the Web because they appear in the list of open databases on the built-in home page. For information about hiding databases from the built-in home page, see "Helping Web users find your database" on page 11-22.

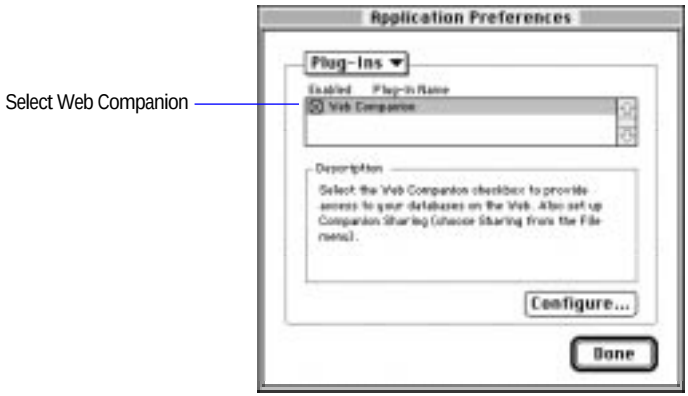
- **Warning** A user can open your database as a guest using FileMaker Pro networking, then publish it on the Web by enabling the FileMaker Pro Web Companion on his or her computer. In this case, your database is protected over the Web by any FileMaker Pro access privileges you have created. However, you should exercise caution when granting access privileges to guests. For more information, see chapter 7, “Networking and access privileges.”

Setting up FileMaker Pro Web Companion

Once you have prepared your files for the Web, set up FileMaker Pro Web Companion:

1. Choose Preferences from the Edit menu, and then choose Application.
2. Choose Plug-Ins from the pop-up menu..
3. Select the Web Companion checkbox.

   For information on configuring FileMaker Pro Web Companion, see “Configuring FileMaker Pro Web Companion” on page 8. In most cases, you will not need to change the configuration default settings.



4. Click Done.

   You only need to set up this preference once.

For each database you want to publish on the Web:

1. Open the database.

2. Choose Sharing from the File menu.
3. Select Web Companion in the Companion Sharing area.

4. Click OK.

Note These settings apply only to the database that is currently open. You need to set up other databases separately if you want to host them on the Web.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- Web Companion

Configuring FileMaker Pro Web Companion

The Web Companion Configuration dialog box contains options you can change as needed. Since the default values are appropriate for most uses, you may not need to change these settings.

These are the default settings:

- Instant Web Publishing is enabled
- a built-in HTML file for your home page is available
- English language is set as the default
- the TCP/IP port number is set to 80

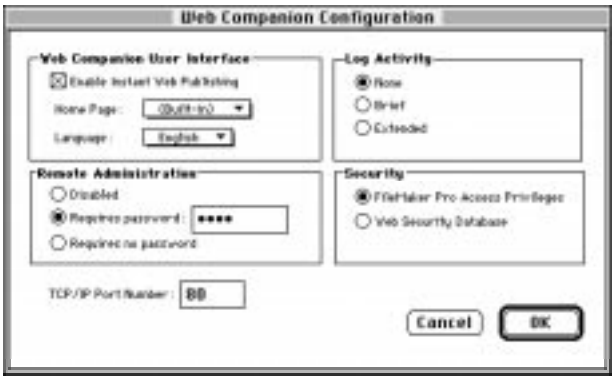
To change the configuration settings for FileMaker Pro Web Companion:

1. Choose Preferences from the Edit menu, and then choose Web Companion.

   You see the Web Companion View Setup dialog box.

2. Click Configure.

   You see the Web Companion Configuration dialog box.



3. Choose the configuration options you want (see below).

Enabling Instant Web Publishing

If you want to publish your database using FileMaker Pro Instant Web Publishing, be sure Enable Instant Web Publishing is selected. If you are exclusively using FileMaker Pro Custom Web Publishing, you can deselect this option.

Specifying a home page for your database

If you are familiar with HTML editing, or you have Web page editing software such as Claris Home Page that creates HTML-based pages, you can create a personalized Web page that can be used instead of FileMaker Pro Web Companion's Built-in home page.

If you want to use a home page other than the one that's built into FileMaker Pro Web Companion, create the home page and move it into the top level of the Web folder in the FileMaker Pro 4.0 folder. Then choose the home page file from the Home Page pop-up menu.

By default, the Built-in Web page is used. This page automatically updates to include links to all databases being shared using the Web Companion.

Here are suggestions for items to include on your custom home page:

- a link that contains the IP address of your published FileMaker Pro database
- a description of what your database contains
- your email address, or an automated email link, so users can contact you if they have questions
- your logo, or other graphics

For more information, see "Helping Web users find your database" on page 22.

Choosing a language

You can specify the language used in both the FileMaker Pro Instant Web Publishing interface and in the Instant Web Publishing Help. Choose a language from the Language pop-up menu.

Note Choosing a language affects the FileMaker Pro Instant Web Publishing interface only. It has no effect on your data.

Creating a Web activity log

You can have FileMaker Pro Web Companion keep a log of the activity your database receives from Web users. This Web activity log is a text file named Web.log, located in the same folder as the FileMaker Pro application.

- For an abbreviated activity log, select Brief.
- For a detailed activity log, select Extensive.
- For no activity log, or to stop keeping an activity log if one already exists, select None.

Remote password administration

You can specify a password to control several remote administration activities:

- remote administration of the Web security databases
- remote uploading and downloading database files to and from the Web folder, in the FileMaker Pro 4.0 folder

- overall remote access to the database

You can specify whether you want to require a password before allowing remote administration:

- To require a password before allowing remote administration, select Requires password.
- To allow remote administration without a password, select Requires no password.
- To prevent remote administration, select Disabled.

Note When creating a password, use only the characters a through z, numerals, or a combination of the two. Do not include spaces in your password. This minimizes the possibility that you will choose characters that may be interpreted incorrectly over the Web.

Web security

You can set up FileMaker Pro access privileges before publishing your database on the Web, or you can control access to your databases with even greater precision by using the Web security database.

To use FileMaker Pro access privileges for access control, select FileMaker Pro access privileges. To use the Web security database, select Web Security Database. For more information, see “Database security” on page 18.

Specifying a port number

The port number specifies how your computer works as a Web server. If port number 80 is already in use (for example, in running a Web server), consider changing TCP/IP Port to 591. Port number 591 has been registered with the Internet Assigned Numbers Authority (IANA) for use with FileMaker Pro Web Companion.

Note If you use a port number other than 80, users cannot access your database unless they append a colon, and the new port number, to your IP address (10.xx.xx.xx:591).

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Web Companion

Setting up Instant Web Publishing

In a browser, users can see different pages, or *views*, of your database:

- a Table View, for working with several records at a time
- a Form View, for working with one record at a time
- a search page, for finding information
- a sort page, for sorting information (if enabled)

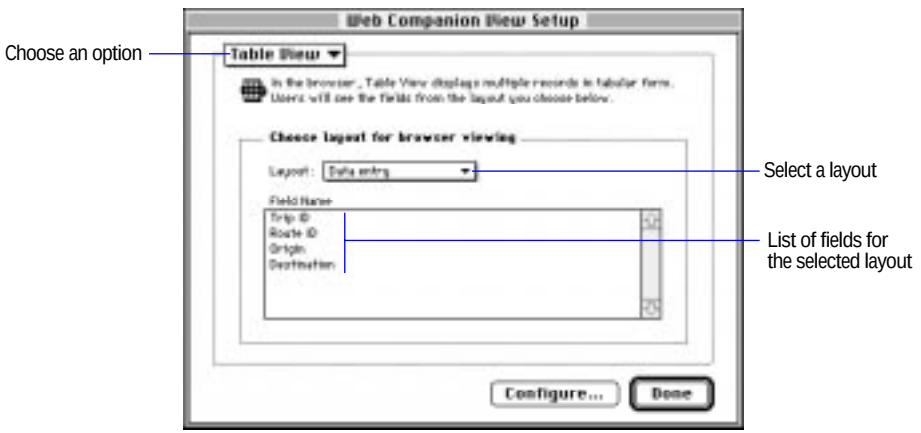
Setting options for Web display

You can choose which fields display in Table View, Form View, and the Search page. You can also set options for the Sort page.

Users see only the pages and features that you have given them access to. For example, if sorting is disabled, Web users do not see the Sort page. By default, all fields are shown in each view, and sorting is disabled.

To set options for each type of Web page:

1. Choose Preferences from the Edit menu, and then choose Web Companion.
2. Choose an option from the pop-up menu for the type of page you want to work with.



3. From the Layout pop-up menu, select the layout that contains the fields you want displayed for Table View, Form View, and Search. (For information on the Sort view, see below.)

   A list of that layout's fields appears below the pop-up menu.

4. Click Done.

Note Selecting a layout does not display that layout over the Web—it only indicates which fields you want the Web Companion to publish on the Web. If the layout you select has special date or number formats, or repeating fields, these do appear over the Web.

Related fields do not appear if you have chosen All Fields (no layout) in the pop-up menu. Instead, choose a layout which contains the related field or fields you want to publish on the Web.

Warning If you choose a layout for use on the Web and it uses related fields, those related fields appear when a Web user opens the master database—even if the related databases are protected with FileMaker Pro access privileges. Keep this in mind when designating layouts for use with published databases.

Setting sort options

You can specify the order in which data is sorted, or you can allow users to define how the records are sorted. You can also specify that records not be sorted at all (they appear in the order they were added to the database).

In the Web Companion View Setup dialog box, choose Sort from the pop-up menu and then choose the options you want.

Do not sort records

If you do not want users to sort data in the Web browser, select Do not sort records. This can help speed up access for those who are using your database. Data is not sorted when it appears on the Web, and the Sort button does not appear.

User defines sorting

If you want to let the user define how data is sorted, select User defines sorting by specified fields in the browser. You specify the fields (including fields from related files) on which the user can sort.

For information on specifying sort fields, see “Sorting records” on page 4-38.

Note If a user sorts the data in a particular order, it does not affect the record order for other users on the Web.

Predefine sorting by specified fields before downloading

If you would like to automatically sort records before the user sees them, select Predefined sorting by specified fields before downloading to the browser. Then specify the sort order. (You can include related fields in this sort order.)

The Web user sees the data sorted in the order the fields appear in the Sort Order list, and the Sort button does not appear.

You can choose either ascending or descending order. You can also choose to have data sorted by a custom order based on a value list. The data are sorted in the same order they appear in a predefined value list.

For information on specifying a sort order, see “Sorting records” on page 4-38.

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- Instant Web Publishing

About the browser views

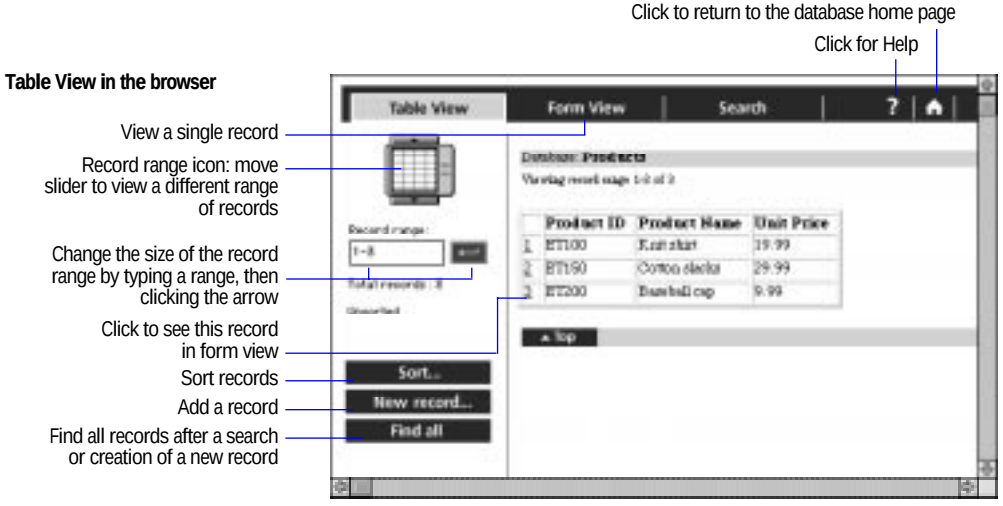
Note The record range and book icons do not appear unless you are using a Java-enabled Web browser.

Detailed help is available to Web users by clicking the question mark (?) button on the Web page.

Table View

Table View is the view the user sees when the database opens. It lists multiple records in tabular form. Each record appears as a row, while each field appears in a column.

Table View in the browser

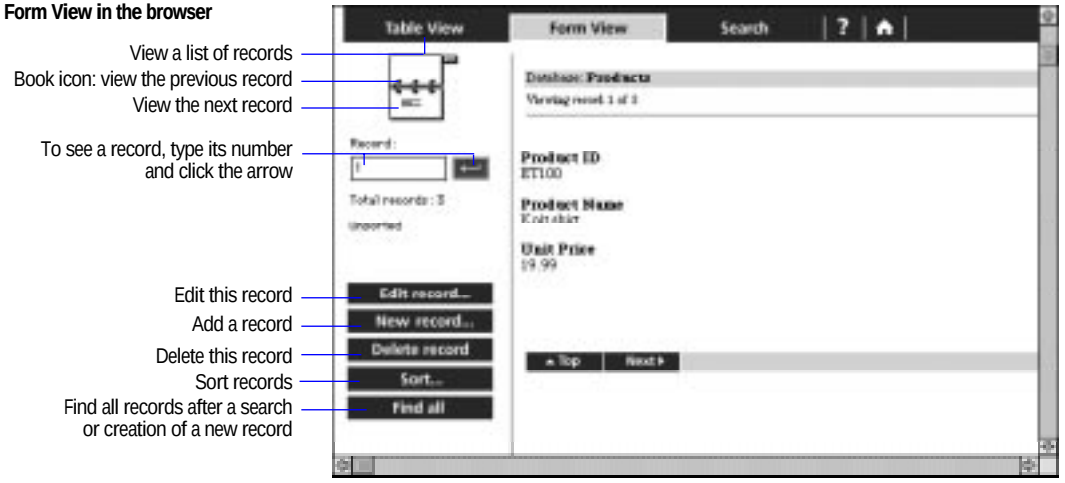

Click to return to the database home page
Click for Help
View a single record
Record range icon: move slider to view a different range of records
Change the size of the record range by typing a range, then clicking the arrow
Click to see this record in form view
Sort records
Add a record
Find all records after a search or creation of a new record
Table View
Form View
Search
Product ID
Product Name
Unit Price
Sort...
New record...
Find all

Note These screens change to reflect features you have enabled or disabled. For example, the New record button does not appear if a user is not permitted to add records.

Form View

The Form View displays one record at a time, making it easy to see the detail of each record. From this view, Web users can edit information in a record.

Form View in the browser

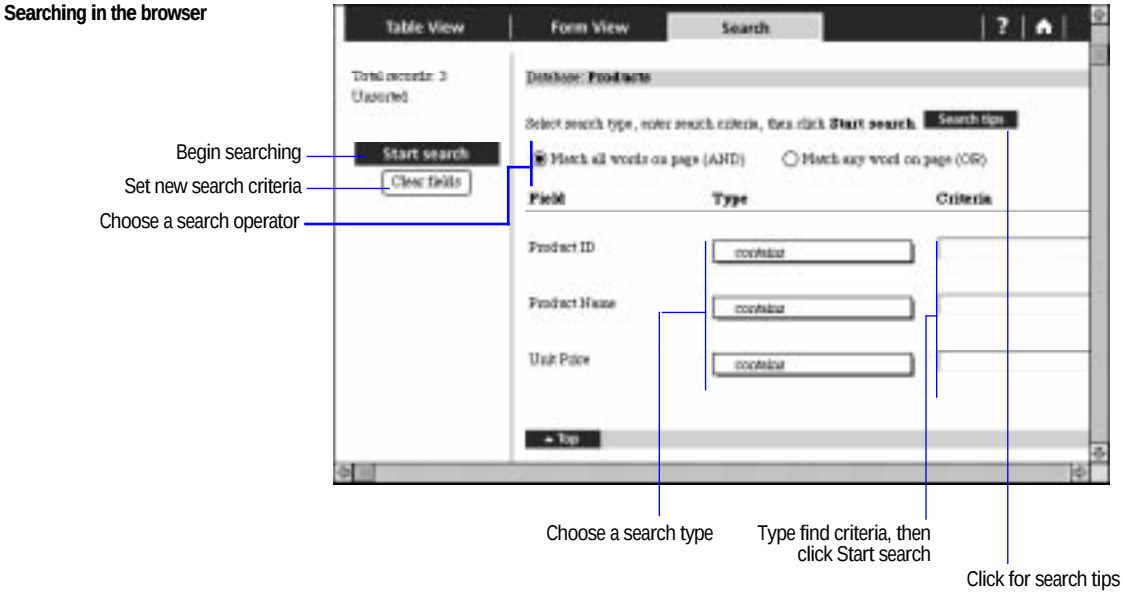


Note These screens change to reflect features you have enabled or disabled. For example, the New record button does not appear if a user is not permitted to add records.

Search page

The search page displays fields that can be used to find specific information in your database. The results of the search are displayed in Table View.

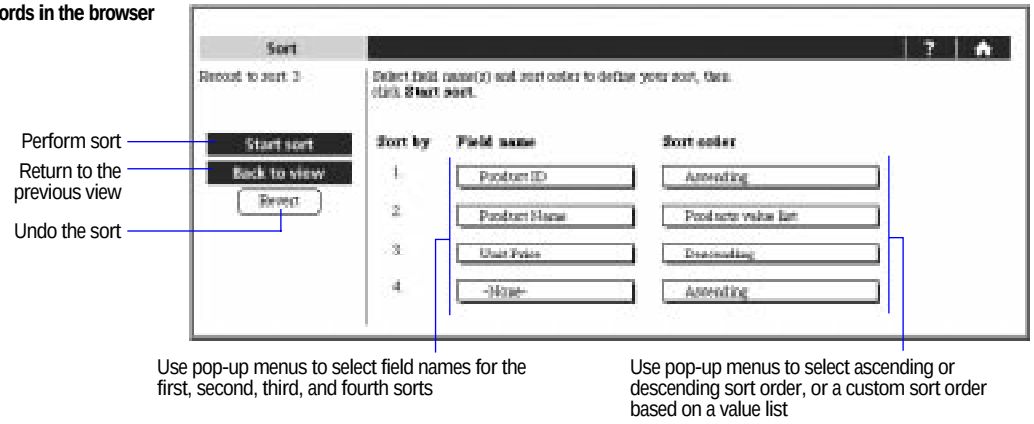
Searching in the browser



Sort page

When records are displayed to users, those records can appear in a particular sorted order. See “Setting sort options” on page 13 for more information.

Sorting records in the browser


Perform sort
Return to the previous view
Undo the sort
Sort
Start sort
Back to view
Revert
Sort by
Field name
Sort order
Use pop-up menus to select field names for the first, second, third, and fourth sorts
Use pop-up menus to select ascending or descending sort order, or a custom sort order based on a value list

? Choose FileMaker Help Index from the ? or Help menu, and then type:

- Web browsers

Database security

You can control access to your database. This limits who can use your file, as well as what they can do. There are two types of database security available using FileMaker Pro Web Companion:

- FileMaker Pro access privileges
- Web security databases

FileMaker Pro access privileges

If you have specified FileMaker Pro access privileges for your file, those same access privileges are in effect when you publish your database on the Web.

When users open your database on the Web, they enter the same password as if they were opening your file on the host machine (or over a FileMaker Pro network). The Web browser's password dialog box has two fields: Name and Password. FileMaker Pro access privilege security ignores anything entered in the Name field.

FileMaker Pro access privileges are convenient, easy to use, and the best choice for most database security needs. For more information on FileMaker Pro access privileges, see chapter 7.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- access privileges, Web

Web Security database

If you want to establish access privileges that are more complex than FileMaker Pro access privileges provide, you can use FileMaker Pro Web Security database.

With the Web security database, you can control whether users can search, update, add, or delete records; whether they can use scripts; and which fields they can work with. If you choose, you can also administer access privileges remotely over the Web. If you do not require this level of security, use FileMaker Pro access privileges.

To use FileMaker Pro Web security database:

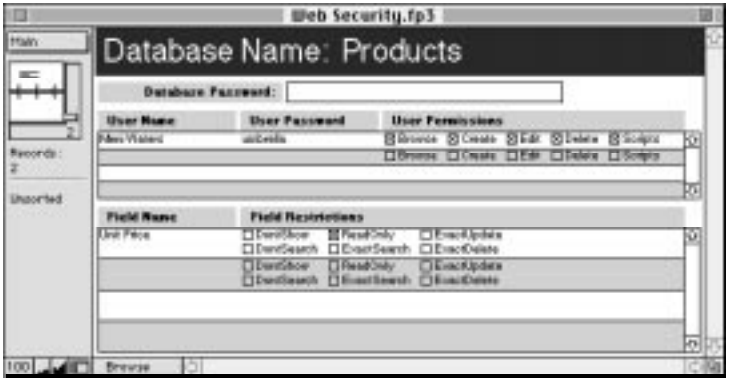
1. Be sure that Web Security Database is selected under Security in the Web Companion Configuration dialog box. For more information see "Web security" on page 11.
2. Choose Open from the File menu.
3. Navigate to the FileMaker Pro 4.0 folder, then open the Web Security folder.
4. Open the Databases folder, and then double-click Web Security.
5. Select New Record from the Mode menu.
6. For Database Name, type the name of the database you are establishing security for. Or, type `All databases` to set privileges that apply to all files published on the Web with this copy of FileMaker Pro.
7. Enter information for the access privileges you want to grant.

8. If the FileMaker Pro database has a password set up with FileMaker Pro access privileges, type that password in the Database Password field.

   Note The Database Password overrides the Web Security database. Web access privileges are never greater than the privileges provided by the Database Password, regardless of the settings in the Web Security database.

   The Security folder contains HTML files used for different security actions.

See the following sections for more information.



User permissions

To set user access privileges, type the user's name in the User Name field, and if desired, type a password for that user in the User Password field. Then select the access privileges for that user. Press Return to set access privileges for another user.

To provide these access privileges	Select this User Permission
Searching records	Search
Adding new records	Add
Editing data in records	Update
Deleting records	Delete
Using scripts defined in the FileMaker Pro database	Scripts

Important If you are using Instant Web Publishing, the Search user permission must be selected for all users.

Field restrictions

To place field restrictions on all users specified in this record, in Field Name type the name of the field in the database you want to restrict. Then select the Field Restrictions for that field.

To place these restrictions	Type the field name, then select this Field Restriction
Do not show a field	DontShow
Do not allow a field to be used for searching	DontSearch
Do not allow a field to be edited	ReadOnly
When a field is used for searching, do not retrieve any records unless the data in the field with the ExactUpdate restriction exactly matches the value that is stored in that field in the database.	ExactSearch
Do not allow the record to be edited unless data in the field with the ExactUpdate restriction exactly matches the value that is stored in that field in the database	ExactUpdate
Do not allow the record to be deleted unless data in the field with the ExactUpdate restriction exactly matches the value that is stored in that field in the database	ExactDelete

Important If you are using Instant Web Publishing, ExactSearch, ExactUpdate, and ExactDelete must be deselected.

Keep these points in mind:

- Create a separate record for every database you want to assign Web Security database access privileges.
- You can type `All Users` in the User Name field to create privileges that apply to any Web user. These privileges override more restrictive privileges you may set later. To prevent this, carefully decide which privileges you want to grant to all users. You can specify browse-only access by deselecting all User Permissions options.
- When creating a password, use only the characters a through z, numerals, or a combination of the two. Do not include spaces in your password. This minimizes the possibility that you will choose characters that may be interpreted incorrectly over the Web.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Web Security databases

Web Security Database remote password administration

If you chose Requires Password in the Remote Administration section of the Web Companion Configuration dialog box, you can use this password to remotely administer some aspects of your database. (For more information, see "Remote password administration" on page 10).

To use the password:

1. When prompted, type `Admin` in the User Name field
2. Type your password in the Password field. Click OK.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ remote administration, databases on the Web

Helping Web users find your database

Browsing a database set up in FileMaker Pro Web Companion requires only Web browsing software and access to the Internet (or an internal intranet). The Web browser must also have the Internet Protocol (IP) address (and port number, if any) of the machine that hosts your database file. You can supply this address for the user to type directly in the Web browser software, or you can provide a link to this IP address on a Web page you set up.

Example The IP address of the machine that hosts your database file is 10.xx.xx.xx. To see your data, the user launches Web browser software and types this IP address.

If you have specified a port number other than 80, that port number must be appended, using a colon, to your IP address:

```
10.xx.xx.xx:591
```

For more information see “Specifying a port number” on page 11. For more information on using a custom home page, see “Specifying a home page for your database” on page 9.

Once Web browser software is pointed to the IP address of the machine hosting your database files, the Web user sees your database home page—a background screen and the list of the files you have currently running on your host machine. Clicking a filename opens the file. If you have specified a password for the file, the user is prompted for it.

Instant Web Publishing built-in home page

Note You can publish a file on the Web, but keep it from displaying on the Built-in home page, by typing an underscore character at the end of the filename, before any filename extension.

Example: "Catalog_" or "Catalog_.fp3"

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Web, publishing databases on

Custom Web Publishing

Custom Web Publishing allows you to customize the appearance of your FileMaker Pro data on the Web. To use Custom Web Publishing, you must create *custom Web pages*, HTML pages that contain Claris Dynamic Markup Language (CDML) tags. CDML is Claris Corporation's proprietary add-on to HTML that allows Web users to dynamically interact with FileMaker Pro databases.

If you do not want to learn HTML and CDML, you can use the FileMaker Pro Assistant feature in Claris Home Page 3.0 to create custom Web pages. Otherwise, you must have an HTML editing application and an understanding of HTML and CDML.

FileMaker Pro 4.0 includes several resources to help you learn and use CDML:

- the CDML Reference database (Web Tools folder)
- the CDML Tool (Web Tools folder)
- CDML template files (Web Tools folder)
- example Web solutions (Web folder)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ Custom Web Publishing

The CDML Reference database

The CDML Reference, located in the Web Tools folder, provides:

- the *Developer's Guide*, to get you started with Custom Web Publishing
- a CDML Tag Description, which shows CDML tag syntax and provides examples

- a list of HTML Input Types

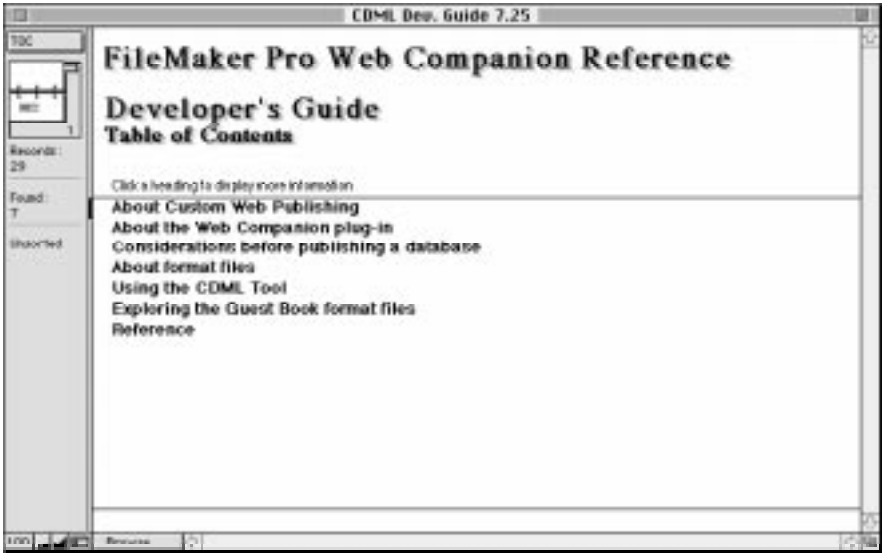
The *Developer's Guide* in the CDML Reference database provides general information about Custom Web Publishing and step-by-step instructions on using the CDML Tool to create custom Web pages.

You can start a new custom Web page by:

- using one of the templates in the CDML Tool (see "Using the CDML templates" in the *Developer's Guide*)
- copying and pasting CDML tags from the CDML Tool to existing HTML pages (see "Adding CDML tags to custom Web pages")
- modifying one of the custom Web pages in the Web folder (see "Working with the sample solutions")
- customizing one of the template files in the Web Tools folder

Note The CDML Reference focuses primarily on the CDML syntax. For information about working with HTML, see an HTML reference book.

Production: new screen shot coming


CDML Dev. Guide 7.25
FileMaker Pro Web Companion Reference
Developer's Guide
Table of Contents
Click a heading to display more information
About Custom Web Publishing
About the Web Companion plug-in
Considerations before publishing a database
About format files
Using the CDML Tool
Exploring the Guest Book format files
Reference

The CDML Tool

The CDML Tool, located in the Web Tools folder, is a FileMaker Pro database that helps you construct custom Web pages quickly and accurately.

Use the CDML Tool to:

- start a custom Web page using basic templates that contain step-by-step instructions (Templates tab)
- copy and paste CDML tags to custom Web pages (Tags tab)

The CDML Tool links open FileMaker Pro databases with HTML editing applications.

Follow these general steps to create a custom Web page using the CDML Tool:

- Open your FileMaker Pro database.
- Open the CDML Tool.
- Click the Templates tab and choose the database and layout names.
- Open an HTML editing application.
- Create a blank HTML editing document, or click the Templates tab of the CDML Tool and paste a template from it.
- Click the Tags tab of the CDML Tool, copy additional CDML tags, and complete the custom Web page by pasting these additional tags into it.
- Create one custom Web page to handle each database activity.

For more information on the CDML Tool, see the *Developer's Guide* in the CDML Reference database.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ CDML Reference database

Sample Web solutions

Three sample Web solutions are provided for you to use as a model for database Custom Web Publishing. The sample Web solutions include helpful comments to assist you in creating custom Web pages.

The following sample Web solutions are located in the Web folder in the FileMaker Pro 4.0 Folder:

- The Guest Book solution allows Web users to add records in the Guest Book.fp3 database.
- The Shopping Cart solution allows Web users to browse through and purchase items from a catalog.
- The Employee Database solution is designed to demonstrate the most widely used CDML tags.

Appendix A: Recovering damaged files

Power failures, hardware problems, and other factors can damage a FileMaker Pro file. If a file is damaged, you can use the FileMaker Pro recovery feature. FileMaker Pro attempts to repair and salvage as much of the information in the file as possible, and then creates a recovered file. You can open and use a recovered file just like any other FileMaker Pro file.

Important Before you begin, be sure you have enough disk space for the recovered file. If there isn't enough space, the recovered file won't be usable.

To recover a damaged file:

1. Be sure the damaged file is closed.
2. Choose Recover from the File menu.
3. In the Open Damaged File dialog box, select the damaged file, and then click Open.

   In the Name New Recovered File dialog box, FileMaker Pro adds Recovered to the filename (which might be truncated).
4. If you want to rename the file, for Name new recovered file, type a name.
5. Click Save.

   A status message tells you about the recovery process. A second message reports the success of the recovery—how many bytes were salvaged, the number of records and values skipped, and the number of lost field definitions that were rebuilt.
6. Click OK.

Keep these points in mind:

- To ensure you always have a file that's up to date, make frequent backup copies of your files, and don't write over the most recent copies.
- If a file is severely damaged, you might not be able to recover it.

A file can grow or shrink in size. A file can grow if the indexes were damaged and repaired. A file can shrink when data deleted by the user, like a paragraph, has finally been deleted from the file.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ recovering files

Appendix B: Working with international files

When you create or clone a database file, FileMaker Pro uses the current settings in the Numbers and Date & Time control panels as the default date, time, and number formats and stores them internally with the file. These *system formats* control how FileMaker Pro enters and indexes data in these field types.

The internal default formats saved with a file may be different from the system formats currently set on your computer when:

- you receive or share a file with different internal default formats
- you changed the system formats on your computer after creating or cloning the file

For example, a file created on a U.S. system has different formats from a file created on a German system, as shown in the following example.

For this field type	A U.S. system format may look like this	A German system format may look like this
Number	1.23 (Decimal separator is a period (.))	1,23 (Decimal separator is a comma (,))
Date	12/31/98	31.12.1998
Time	2:15:58 PM	14:15:58

Using the current system formats

When you open or work with a file with formats different from the current system formats, you can continue to use the formats saved with the file, or you can use the current system formats. (When you use the current system formats, you don't change the formats saved with the file—you simply enter and view data in a format that's familiar to you.)

- When you open a file with different internal default formats, FileMaker Pro displays a message alerting you to the situation. To use the current system formats, click Yes. To use the formats saved with the file, click No.

FileMaker Pro
The date and time formats associated with "Organisation" are different than the current system settings. Do you wish to use the system settings for data entry?
No
Yes

- As you work with a file with different internal default formats, you can use the current system formats by choosing Use System Formats from the Format menu. You see this command only when the current file was saved with internal default formats different from the current system formats.

Keep these points in mind:

- You see the alert message only if the setting of Use System Formats when the file is closed is different from the setting when the file was open.
- To change the formats saved with a file, you must change the system formats, and then clone the file. You can then change the system formats to their original settings. (For information about cloning a file, see "Saving a copy of a file" on page 1-11.)
- Using system formats doesn't affect the formatting of dates, numbers, and times that you set in FileMaker Pro for displaying data in fields. However, you must enter data precisely according to the system format. For example, when date parts in a system format are in order as year, month, and day, separated by a period (.), you must enter dates in that format, as in `98.12.31`. (For information about display formats for fields, see "Defining display formats for fields" on page 3-59.)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ system formats, setting

Defining scripts for system formats

You can have FileMaker Pro open a file using the current system formats by including the Set Use System Formats script step in a startup script. In the Script Definition dialog box, choose the Set Use System Formats script step, and then select On to use the current system formats. (To use the formats saved with the file, select Off.)

For more information about defining scripts, see chapter 5, "Using ScriptMaker and buttons."

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- system formats, setting

Appendix C: Summary of functions

A *function* is a predefined, named formula that performs a specific calculation and returns a single, specific value. You use functions when you are defining calculation fields. You can use functions by themselves or combine them with other functions or expressions.

This appendix summarizes the FileMaker Pro functions by category. For detailed information about functions, see FileMaker Pro Help.

Important In the United States, commas act as list separators in functions, formulas, and calculations. In other countries, semicolons might be used as list separators. The separator being used depends on the operating system your computer uses, as well as the one used when the file was created.

Before you read this appendix, be sure you understand formulas and how to define calculations, as explained in "Understanding formulas" on page 2-14. In addition, be sure you know how to use FileMaker Pro Help, as explained in the preface, "Getting help."

Understanding functions

With a few exceptions, all FileMaker Pro functions use the following syntax:

Function name(*parameter*)

This part	Represents
Function name	The calculation to perform
parameter	The value or expression on which the calculation is performed. Most functions require one or more parameters. A parameter can be a constant, a field name, or another function
( )	The beginning and end of the parameter

Here are some examples of functions:

This function	Returns
`Length("John")`	4 (the number of characters in the text "John")
`Round(SalesTax,2)`	The amount of sales tax rounded to two decimal places
`Position(Name,"Mc",1,1)`	The position of the first occurrence of "Mc" in the Name field

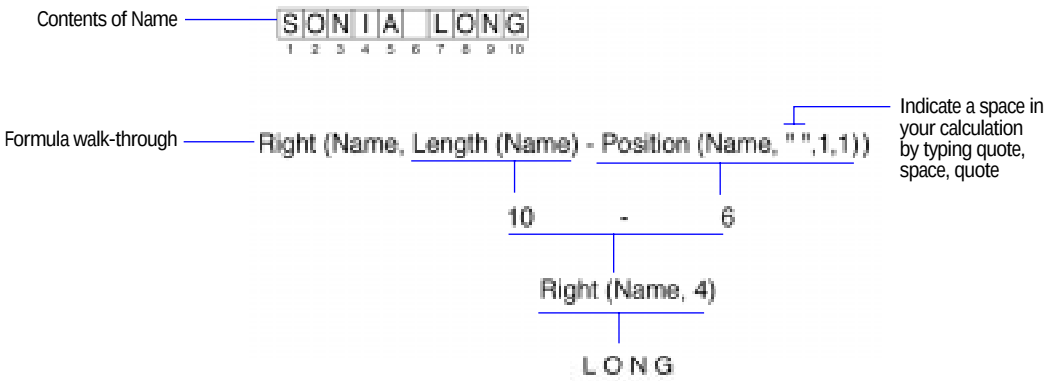
Some functions require two or more parameters, as in this example:

```
Position(LastName,"Mc",1, 1)
```

You can nest one function within another to perform more powerful calculations on your data, as in this example:

```
Left(Name,Position(Name," ",1, 1))
```

The result of a function can be used as a constant. The following example shows how FileMaker Pro evaluates a complex formula by simplifying each function into a constant. In the example, the Right function returns every character of text that is to the right of the first space in the Name field. (This example shows how Right returns the last name of a field that contains a first name and last name, when the value doesn't include a title like Dr. or middle initials.)


Contents of Name
S O N I A L O N G
1 2 3 4 5 6 7 8 9 10
Formula walk-through
Right (Name, Length (Name) - Position (Name, " ",1,1))
Indicate a space in your calculation by typing quote, space, quote
10 - 6
Right (Name, 4)
L O N G

Keep these points in mind:

- The following sections summarize FileMaker Pro functions. Values in quotation marks ("") are text values. To include a space in a text expression, type a quote, then a space, then a quote (" "). For complete information about each function, including examples, see FileMaker Pro Help.
- A function can return the following data types: text, number, date, time, or container. However, you determine the data type of the calculated field when you define its calculation.

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ functions, using

Text functions

The parameter *text* can be a text expression (in quotes) or a field name.

Syntax	Definition
Exact *(original text, comparison text)* Exact *(original container, comparison container)*	Compares *original text* and *comparison text* for exact match, including case when comparing text. Returns "1" for a match, "0" for no match Compares *original container* and *comparison container* for exact match. Returns "1" for a match, "0" for no match
Left *(text, number)*	Returns the specified *number* of characters in *text*, counting from the left
LeftWords *(text, number of words)*	Returns the specified *number of words* in *text*, counting from the left
Length *(text)*	Returns number of characters in *text*
Lower *(text)*	Converts *text* to lowercase
Middle *(text, start, size)*	Returns characters in *text*, counting from the position of *start*, through the number of characters in *size*
MiddleWords *(text, starting word, number of words)*	Returns the middle words in *text*, beginning with the number of the *starting word* and continuing through the *number of words*
PatternCount *(text, search string)*	Returns the number of occurrences of *search string* in *text*
Position *(text, search string, start, occurrence)*	Returns the position of the specified *occurrence* of *search string* in *text*, from *start*; otherwise returns 0. Position is case insensitive

Syntax	Definition
Proper *(text)*	Converts the first letter in each word of *text* to uppercase and the remainder to lowercase
Replace *(text, start, size, replacement text)*	Replaces characters in *text* with *replacement text*, from the position of *start* and containing the number of characters in *size*
Right *(text, number)*	Returns the specified *number* of characters in *text*, counting from the right
RightWords *(text, number of words)*	Returns the specified *number of words* in *text*, counting from the right
Substitute *(text, search string, replace string)*	In *text*, substitutes each occurrence of *search string* with *replace string*. Substitute is case sensitive
TextToDate *(text)*	Converts *text* to a date. Type *text* in the format MM/DD/YYYY
TextToNum *(text)*	Converts *text* to a number
TextToTime *(text)*	Converts *text* to a time. Type *text* in the format HH:MM:SS, with or without seconds and AM or PM
Trim *(text)*	Returns *text* without leading and trailing spaces
Upper *(text)*	Converts *text* to uppercase
WordCount *(text)*	Returns the number of words in *text*

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ text functions

Number functions

Syntax	Definition
Abs *(number)*	Returns the absolute value of *number*
Exp *(number)*	Returns the value of *e* raised to the power of *number*
Int *(number)*	Returns the integer (whole) portion of *number*
Mod *(number, divisor)*	Returns the remainder after *number* is divided by *divisor*
NumToText *(number)*	Converts *number* to text
Random	For each record, returns a random number between 0.0 and 1.0

Syntax	Definition
Round *(number, precision)*	Returns *number* rounded to the number of decimal places in *precision*. When *precision* is negative, all digits right of the decimal separator are dropped and *number* is rounded to the nearest ten for a *precision* of -1, the nearest hundred for -2, and so on
Sign *(number)*	Returns –1 when *number* is negative; returns 0 when *number* is zero; returns 1 when *number* is positive
Sqrt *(number)*	Returns the square root of *number*
Truncate *(number, precision)*	Returns *number* truncated to the number of decimal places in *precision*

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ numeric functions

Date functions

Syntax	Definition
Date *(month, day, year)*	Returns the calendar date of *month*, *day*, *year* (in digits), from January 1, 0001, in the date field format you've set in your computer system software. *Year* must be four digits
DateToText *(date)*	Converts *date* to text
Day *(date)*	Returns a number representing the day portion of *date*
DayName *(date)*	Returns the weekday name of *date*
DayofWeek *(date)*	Returns the weekday position of *date*, from Sunday (1) through Saturday (7)
DayofYear *(date)*	Returns the number of days elapsed since January 1 of the year in *date*
Month *(date)*	Returns a number representing the month portion of *date*
MonthName *(date)*	Returns the month name based on the *date* provided
Today	Returns the current date
WeekofYear *(date)*	Returns the number of weeks elapsed since January 1 of the year in *date*, counting fractions of weeks as whole weeks

Syntax	Definition
WeekofYearFiscal *(date, starting day)*	Returns the number of weeks elapsed since the first week of the year of *date*, using *starting day* (a number from 1-7, where 1 is Sunday) as the first day of the week. The first week of the year is a week that contains four or more days of that year
Year *(date)*	Returns a number representing the year portion of *date*

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- date functions

Time functions

Syntax	Definition
Hour *(time)*	Returns the hour portion of *time*
Minute *(time)*	Returns the minutes portion of *time*
Seconds *(time)*	Returns the seconds portion of *time*
Time *(hours, minutes, seconds)*	Returns *hours*, *minutes*, *seconds* (as digits) as a time, in the current time field format
TimeToText *(time)*	Converts *time* to text

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- time functions

Aggregate functions

Syntax	Definition
Average *(field)* Average *(relationship::field)*	Returns the average of nonblank values in a single repeating field *(field)* or *(relationship::field)*
Average *(field1, field2,...)* Average *(relationship::field1, relationship::field2...)*	Returns the average of nonblank values in each corresponding repetition of one or more repeating or non-repeating fields *(field1, field2,...)* or *(relationship::field1, relationship::field2...)*
Count *(field)* Count *(relationship::field)*	Returns the number of nonblank values in a repeating field *(field)* or *(relationship::field)*
Count *(field1, field2,...)* Count *(relationship::field1, relationship::field2...)*	Returns the number of nonblank values in each corresponding repetition of one or more repeating or non-repeating fields *(field1, field2,...)* or *(relationship::field1, relationship::field2...)*

Syntax	Definition
Max *(field)* Max *(relationship::field)*	Returns the highest nonblank value in a repeating field *(field*) or *(relationship::field)*
Max *(field1, field2,...)* Max *(relationship::field1, relationship::field2...)*	Returns the highest nonblank value in each corresponding repetition of one or more repeating or non-repeating fields *(field1, field2,...*) or *(relationship::field1, relationship::field2...)*
Min *(field)* Min *(relationship::field)*	Returns the lowest nonblank value in a repeating field *(field*) or *(relationship::field)*
Min *(field1, field2,...)* Min *(relationship::field1, relationship::field2...)*	Returns the lowest nonblank value in each corresponding repetition of one or more repeating or non-repeating fields *(field1, field2,...*) or *(relationship::field1, relationship::field2...)*
StDev *(field)* StDev *(relationship::field)*	Returns the standard deviation of the sample represented by a series of nonblank values in a repeating field *(field*) or *(relationship::field)*
StDev *(field1, field2,...)* StDev *(relationship::field1, relationship::field2...)*	Returns the standard deviation of the sample represented by a series of nonblank values in each corresponding repetition of one or more repeating or non-repeating fields *(field1, field2,...*) or *(relationship::field1, relationship::field2...)*
StDevP *(field)* StDevP *(relationship::field)*	Returns the standard deviation of a population represented by a series of nonblank values in a repeating field *(field*) or *(relationship::field)*
StDevP *(field1, field2,...)* StDevP *(relationship::field1, relationship::field2...)*	Returns the standard deviation of a population represented by a series of nonblank values in each corresponding repetition of one or more repeating or non-repeating fields *(field1, field2,...*) or *(relationship::field1, relationship::field2...)*
Sum *(field)* Sum *(relationship::field)*	Returns the sum of nonblank values in a single repeating field *(field*) or *(relationship::field)*
Sum *(field1, field2,...)* Sum *(relationship::field1, relationship::field2...)*	Returns the sum of nonblank values in each corresponding repetition of one or more repeating or non-repeating fields *(field1, field2,...*) or *(relationship::field1, relationship::field2...)*

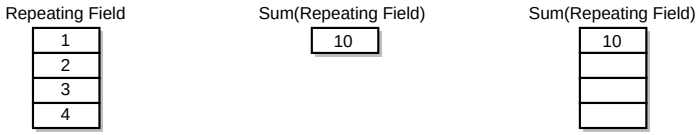
When you use aggregate functions, keep these points in mind:

- You can specify fields in the current database *(field)* or in a related database *(relationship::field)*.
- If you specify a single parameter (*field)* or *(relationship::field)*, it must be either a related field, or a repeating field. If you specify multiple parameters (*field1, field2,...)* or *(relationship::field1, relationship::field2)*, they can be field references, a constant, or any valid expression. If you specify related fields, you can name a different relationship for each related field if you want *(relationship1::field 1, relationship2::field 2...)*

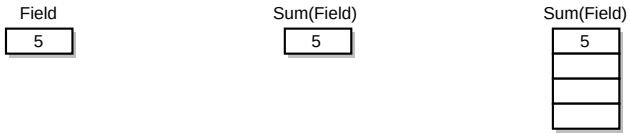
- The parameters *field1, field2,...* can include a numeric constant (for example, 10). A constant in a formula for a repeating field affects the result for every repetition.
- When *field1, field2,...* includes a nonrepeating field, that value is used in the result for only the first repetition unless you use the Extend function. For information about the Extend function, see "Repeating functions" on page C-12.
- Empty (null) values are ignored.
- If you specify a single parameter (*field)* or *(relationship::field)*, the result includes all nonblank values in all repetitions. When the calculation is also repeating, the result is returned in the first repetition.
- When *field1, field2,...* are repeating and the calculation result is not repeating, only the values from the first repetition of the repeating fields are used to calculate the result. If the calculation result field is also repeating, FileMaker Pro uses the corresponding repetitions of the fields to calculate the result.
- Values in repetitions that exceed the number of repetitions in the calculated field are ignored. For example, a calculated field with three repetitions holds only three results, even when one field in the calculation has five repetitions.

The following examples show how aggregate functions produce results based on the number of parameters and whether the calculations involve repeating or nonrepeating fields.

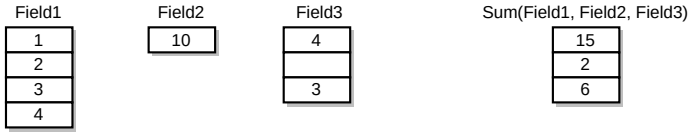
Example 1
Single input parameter



Example 2
Single input parameter



Example 3
Multiple input parameters



? Choose FileMaker Help Index from the ? or Help menu, and then type:

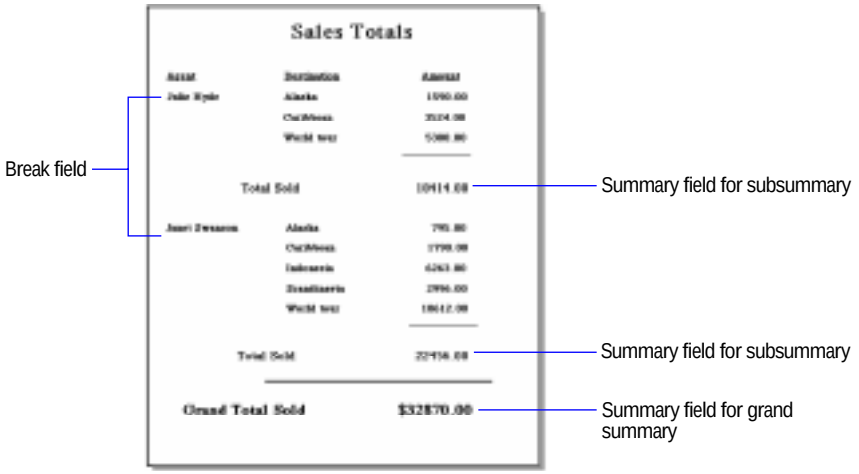
- aggregate functions

Summary functions

Use a summary function with summary fields.

Syntax	Definition
GetSummary *(summary field, break field)*	Returns the value of *summary field* for the current range of records when records are sorted by *break field*; otherwise, returns an empty result. This is equivalent to calculating a subsummary
GetSummary *(summary field, summary field)*	Returns the value of *summary field* for the current found set of records. This is equivalent to calculating a grand summary A calculation using GetSummary is unstored

When a database file is sorted, you can place a summary field in a subsummary part to get subtotal values. (See “ Adding a summary part” on page 3-30.) Because sorting has the effect of grouping similar values, the field you sort by is called a *break field*. FileMaker Pro calculates a subtotal for each group of records with a common value in the break field, letting you “break out” that range from the rest of the database.



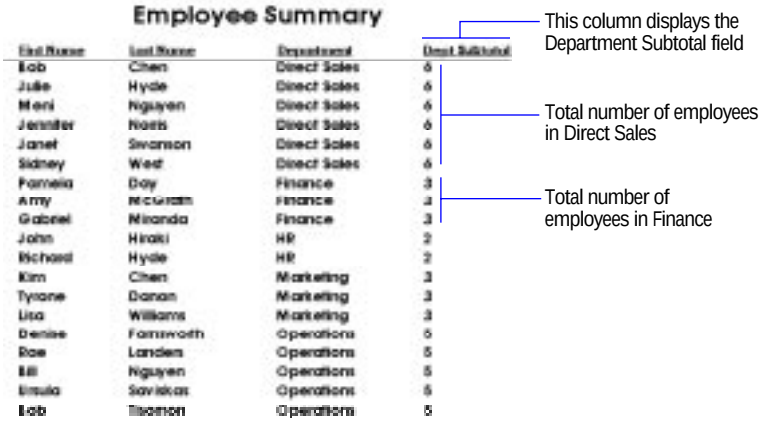
The GetSummary function has the effect of a summary field in a subsummary or grand summary part, performed from within a calculation. To calculate a subsummary value, you must sort by the break field to get appropriate results in a GetSummary function.

Use GetSummary to:

- create subsummary or grand summary values without using subsummary or grand summary parts on a layout—you can see the resulting values in the body part
- perform mathematical calculations on a summary field

The following examples show the result of the GetSummary function. In the first example, the file is sorted by the Department field first, and then by the Last Name field. Department Subtotal is a calculation field:

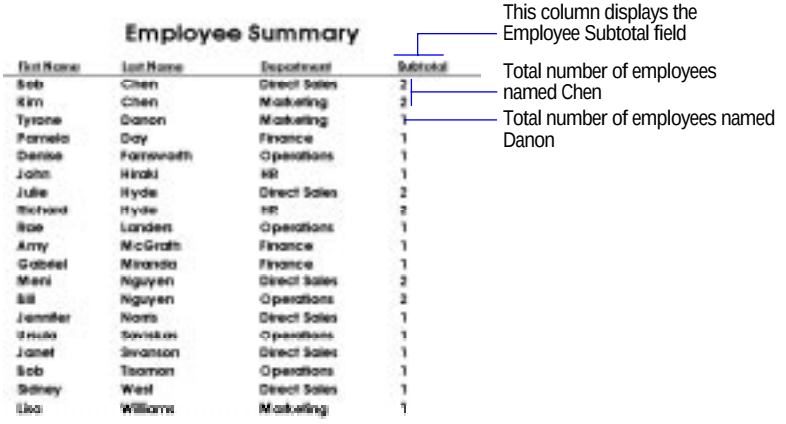
```
GetSummary(Total Number, Department)
```


Employee Summary
This column displays the Department Subtotal field
Total number of employees in Direct Sales
Total number of employees in Finance

First Name	Last Name	Department	Dept Subtotal
Bob	Chen	Direct Sales	6
Julie	Hyde	Direct Sales	6
Meni	Nguyen	Direct Sales	6
Jennifer	Norris	Direct Sales	6
Janet	Swanson	Direct Sales	6
Sidney	West	Direct Sales	6
Pamela	Day	Finance	3
Amy	McGrath	Finance	3
Gabriel	Miranda	Finance	3
John	Hiraki	HR	2
Richard	Hyde	HR	2
Kim	Chen	Marketing	3
Tyrone	Danon	Marketing	3
Lisa	Williams	Marketing	3
Denise	Farnsworth	Operations	5
Rae	Landers	Operations	5
Bill	Nguyen	Operations	5
Ursula	Savickas	Operations	5
Bob	Tsamon	Operations	5

In the second example, the file is sorted by the Last Name field first, and then by the Department field. Employee Subtotal is a calculation field:

```
GetSummary(Total Number, Last Name)
```


Employee Summary
This column displays the Employee Subtotal field
Total number of employees named Chen
Total number of employees named Danon

First Name	Last Name	Department	Subtotal
Bob	Chen	Direct Sales	2
Kim	Chen	Marketing	2
Tyrone	Danon	Marketing	1
Pamela	Day	Finance	1
Denise	Farnsworth	Operations	1
John	Hiraki	HR	1
Julie	Hyde	Direct Sales	2
Richard	Hyde	HR	2
Rae	Landers	Operations	1
Amy	McGrath	Finance	1
Gabriel	Miranda	Finance	1
Meni	Nguyen	Direct Sales	2
Bill	Nguyen	Operations	2
Jennifer	Norris	Direct Sales	1
Ursula	Savickas	Operations	1
Janet	Swanson	Direct Sales	1
Bob	Tsamon	Operations	1
Sidney	West	Direct Sales	1
Lisa	Williams	Marketing	1

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

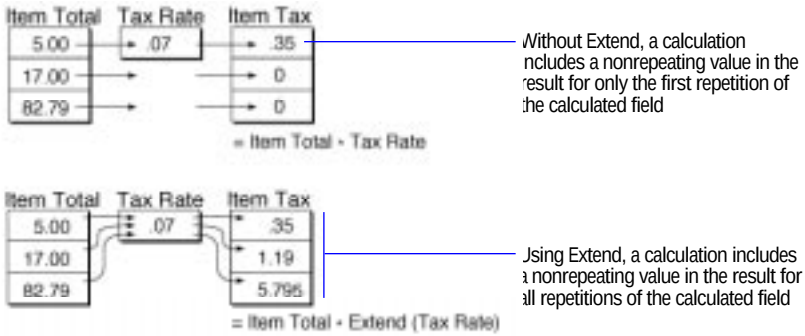
- summary functions

Repeating functions

Use repeating functions with repeating fields.

Syntax	Definition
Extend *(nonrepeating field)*	Allows the value of *non-repeating field* to be used in a calculation involving repeating fields. (See the following example)
GetRepetition *(repeating field, number)*	Returns the contents of the repetition *number* of *repeating field*
Last *(repeating field)*	Returns the last valid, nonblank value in *repeating field*

This example shows how the Extend function ensures accurate results when used in calculations involving nonrepeating fields.



Choose FileMaker Help Index from the ? or Help menu, and then type:

- repeating functions

Financial functions

Syntax	Definition
FV *(payment, interest rate, periods)*	Returns the future value of an investment based on *interest rate* and *payment* for *periods*
NPV *(payment, interest rate)*	Returns net present value of a series of unequal *payments* (in a repeating field) made at regular intervals using a fixed *interest rate* (in a number field) per interval. (When *payments* contains equal values, use the PV function)
PMT *(principal, interest rate, term)*	Returns the payment needed to meet the requirements of *principal, interest rate, term*
PV *(payment, interest rate, periods)*	Returns the present value of equal *payments* made at regular *periods*, assuming a fixed *interest rate* per payment

Keep these points in mind:

- *Term* is expressed in months
- *Interest rate* is a value from 0.0 to 1.0, divided by 12 (months).

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ financial functions

Trigonometric functions

Syntax	Definition
Atan *(number)*	Returns the trigonometric arc (inverse) tangent of *number*. The arc tangent is the angle, in radians, whose tangent equals *number*
Cos *(number)*	Returns the cosine of the angle (in radians) of *number*
Degrees *(number)*	Converts *number* from radians to degrees (π/180 radians)
Ln *(number)*	Returns the base-e (natural) logarithm of *number*
Log *(number)*	Returns the common logarithm (base 10) of *number*, which is any positive value
PI	Returns the value of pi (π), approximately 3.14159

Syntax	Definition
Radians *(number)*	Converts degrees (π/180 radians) in *number* to radians. Parameters for trigonometric functions must be in radians—use this function to convert values from degrees to radians within a formula
Sin *(number)*	Returns the sine of an angle expressed in radians
Tan *(number)*	Returns the tangent of the angle (in radians) in *number*. Tangents for values of 90 degrees (π/2 radians) or multiples are undefined (infinite)

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

▸ trigonometric functions

Logical functions

Syntax	Definition
Case *(test1, result1 [, test2, result2, default result]...)*	Evaluates *test1* to produce a result. When *test1* is true (a nonzero value), returns *result1*; when *test2* is true, returns *result 2*, and so on. When no test is true, returns an empty (null) value, or the *default result* you supply
Choose *(test, result0 [, result1, result2]...)*	Evaluates *test* to produce an index number used to choose a *result*. When index is 0, returns *result0*; when index is 1, returns *result1*, and so on. When there's no corresponding *result*, returns an empty (null) result
If *(test, result one, result two)*	Evaluates *test* to return a true or false result. When *test* is true (1), returns *result one*; when *test* is false (0), returns *result two*. *Test* must return either a numeric or Boolean result. (See the example below)
IsEmpty *(field)*	Returns true (1) when *field* is empty (null); otherwise returns false (0)
IsValid *(field)*	Returns false (0) when *field* is missing from the file or when *field* contains an invalid value; otherwise returns true (1). For example, if a field in a related file is deleted, references to that field in the master file are invalid. See chapter 10, "Using data from related files."

The following example shows how the If function returns a different result based on a true or false condition.

SYNTAX:

```
If (Test,ResultIfTrue,ResultIfFalse)
```

BASIC EXAMPLE (Not Nested):

```
If(Signal="Green",Go,Stop)
```

When test is True

```
If(Signal="Green",Go,Stop)
```

When test is False

```
If(Signal="Green",Go,Stop)
```

ADVANCED EXAMPLE (Nested If's):

```
If (Signal="Green",Go, If(Signal="Yellow",Slow down,Stop))
```

When first test is True

```
If (Signal="Green",Go, If(Signal="Yellow",Slow down,Stop))
```

When first test is False

```
If (Signal="Green",Go, If(Signal="Yellow",Slow down,Stop))
```

When second test is True

```
If (Signal="Green",Go, If(Signal="Yellow",Slow down,Stop))
```

When second test is False

```
If (Signal="Green",Go, If(Signal="Yellow",Slow down,Stop))
```

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- logical functions

Status functions

You can use status functions in ScriptMaker scripts to monitor the state of your database. When creating a calculation using a status function, choose Status functions from the pop-up menu above the function list, then double click the status function you want from the function list. For examples of scripts that use status functions, see "Displaying customized layouts" on page 5-32 and FileMaker Pro Help.

Syntax	Definition
Status (CurrentAppVersion)	Returns the FileMaker Pro version currently in use
Status (CurrentDate)	Returns the current date
Status (CurrentError)	Returns a number for the current error value. Use Status (CurrentError) to check error results when FileMaker Pro performs a script. (See "Control steps" on page 5-5.)
Status (CurrentFieldName)	Returns the name of the current field
Status (CurrentFileName)	Returns the name of the current file
Status (CurrentFileSize)	Returns the size (in bytes) of the current file
Status (CurrentFoundCount)	Returns the number of records in the current found set
Status (CurrentGroup)	Returns the group (or groups) that the current user is a member of, based on the current password
Status (CurrentHostName)	Returns the host name FileMaker Pro registers on the network
Status (CurrentLanguage)	Returns the current language set on the current system
Status (CurrentLayoutCount)	Returns the number of layouts in the database
Status (CurrentLayoutName)	Returns the name of the current layout
Status (CurrentLayoutNumber)	Returns the number of the current layout
Status (CurrentMessageChoice)	Returns a number corresponding to the button clicked in an alert message displayed using the Show Message step in a script. Returns 1 for OK, 2 for Cancel, and 3 for the third defined button. (See "Open Menu Item steps" on page 5-10.)
Status (CurrentMode)	Returns a number for the FileMaker Pro mode in use when the calculation is performed. Returns 0 for Browse mode, 1 for Find mode, or 2 for Preview mode

Syntax	Definition
Status (CurrentModifierKeys)	Returns a number representing which keyboard modifier keys (for example, Shift) are being pressed by the user). For more information, see FileMaker Pro Help
Status (CurrentMultiUserStatus)	Returns 0 for a single user file, 1 for a multiuser file and the computer is the host, or 2 for a multiuser file and the computer is a guest
Status (CurrentNetworkChoice)	Returns the name of the network protocol
Status (CurrentPageNumber)	Returns the page number currently printing or being previewed. When no page is printing or being previewed, returns 0
Status (CurrentPlatform)	Returns a number for the platform currently in use. Returns 1 for Macintosh, 2 for Windows
Status (CurrentPortalRow)	Returns the number of the current row in a selected portal. When no portal is selected, returns 0
Status (CurrentPrinterName)	Returns the identification of the current printer
Status (CurrentRecordCount)	Returns the number of records in a file
Status (CurrentRecordID)	Returns the unique ID of the current record. (For more information, see FileMaker Pro Help)
Status (CurrentRecordNumber)	Returns the number of the current record in the found set
Status (CurrentRepetitionNumber)	Returns the current repetition number (counting the first repetition as 1) of the current repeating field. When the current field is nonrepeating, returns 1
Status (CurrentRequestCount)	Returns the number of find requests defined in the database
Status (CurrentScreenDepth)	Returns the number of bits needed to represent the color of a pixel on the main computer screen
Status (CurrentScreenHeight)	Returns the number of pixels displayed vertically on the screen on which the current file is open. When the window spans more than one screen, uses the screen that contains the largest percentage of the FileMaker Pro window
Status (CurrentScreenWidth)	Returns the number of pixels displayed horizontally on the screen on which the current file is open. When the window spans more than one screen, uses the screen that contains the largest percentage of the FileMaker Pro window
Status (CurrentScriptName)	Returns the name of the script currently running or paused
Status (CurrentSortStatus)	Returns a number representing the current sort status. Returns 0 for unsorted, 1 for sorted, or 2 for semisorted

Syntax	Definition
Status (CurrentSystemVersion)	Returns the system version currently in use
Status (CurrentTime)	Returns the current time
Status (CurrentUserCount)	Returns the number of users accessing the file. Returns 1 for a single user, or 1 plus the number of guests for multiple users using FileMaker Pro networking. (Web users are not counted)
Status (CurrentUserName)	Returns the identification of the current FileMaker Pro user, as specified by the general preference

? **Choose FileMaker Help Index from the ? or Help menu, and then type:**

- status functions

Design functions

Design functions return information about the structure of any specified database that is currently open on your computer. For example, you could determine the names of all the layouts or fields in an open database.

Syntax	Definition
FieldRepetitions *(database name, layout name, field name)*	Returns the number of repetitions of a specified repeating field
FieldNames *(database name, layout name)*	Returns the names of fields in the database and layout you specify. You can also type two quotes ("") in place of a layout name to return the names of all fields in the specified database.
FieldBounds *(database name, layout name, field name)*	Returns the location and size of a specified field
FieldStyle *(database name, layout name, field name)*	Returns how a specified field is formatted on a layout (for example, radio button), and whether a value list is associated with the field
FieldType *(database name, field name)*	Returns the field definition for a specified field
LayoutNames *(database name)*	Returns the names of layouts in a specified database file
DatabaseNames	Returns the names of the currently opened databases
RelationInfo *(database name, relationship name)*	Returns the name of the related file for a specified relationship
RelationNames *(database name)*	Returns the relationships defined in a specified database file

Syntax	Definition
ScriptNames *(database name)*	Returns the scripts defined in a specified database file
ValueListItems *(database name, value list name)*	Returns the values defined for a specified value list
ValueListNames *(database name)*	Returns the value lists defined in a specified database file

FileMaker Pro Web Companion external functions

FileMaker Pro Web Companion and other FileMaker Pro plug-ins can add new functions to the standard functions that are available in FileMaker Pro. Functions added by FileMaker Pro plug-ins are called external functions.

You use special syntax with external functions:

```
External ("function name", parameter)
```

where `function name` is in quotes and is the name of an external function supported by an installed and configured plug-in. The parameter is required, even if it is only `0`.

Note The following functions are only available if FileMaker Pro plug-ins, such as the Web Companion, are installed on your computer (see the FileMaker Pro *Installation and New Features Guide* for more information on Web Companion installation). If there are no FileMaker Pro plug-ins installed, or the ones installed do not support external functions, you see only the generic external function definition in the Specify Calculation dialog box:

```
External (name, parameter)
```

Syntax	Definition
External ("Web-Version", 0)	Returns the version of FileMaker Pro Web Companion that loads when you open FileMaker Pro
External ("Web-ClientAddress", 0)	Returns the domain name (for example, www.claris.com) of a Web user whose HTTP request is currently being processed by FileMaker Pro Web Companion. Returns the Web user's IP address if the domain name is not available
External ("Web-ClientIP", 0)	Returns the IP (Internet protocol) address of the Web user whose HTTP request is currently being processed by FileMaker Pro Web Companion

Syntax	Definition
External ("Web-ClientName", 0)	Returns the value that the Web user types for user name in the Web browser password dialog box
External ("Web-ClientType", 0)	Returns the name and version of the Web browser being used by the Web user
External ("Web-ToHTML", field name) External ("Web-ToHTML", text value)	Returns the contents of the specified field or of the text value encoded in HTML
External ("Web-ToHTTP", field name) External ("Web-ToHTTP", text value)	Returns the contents of the specified field or of the text value encoded in HTTP

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